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A CONTRIBUTION TO INTESTINAL SURGERY. ASEPTIC INTESTINAL ANASTOMOSIS (ENTERO-ENTEROSTOMY AND GASTRO-ENTEROSTOMY.)

V. PLETH, M.D. AND VERA W. PLETH, M.D.,
Surgeons to "Hospital San Camilo,"
GUADALAJARA, MEXICO.

A method similar to the one here to be described was published by one of us (V. Pleth) in the AMERICAN JOURNAL OF SURGERY, June 1906, entitled, *"A Simple and Practical Method of Performing Intestinal Anastomosis by Means of Two Knitting Needles."* Soon after, we modified the procedure, making the technic still simpler and absolutely aseptic. We have now tried the method for about two years and have had no deaths, that could be ascribed to it, though often operating under such trying conditions as only medical men know, who have practiced in a land like Mexico. Intestinal lesions are very common here, due to the terrible frequency with which the Mexicans use their knives to settle even trivial difficulties; it is an ordinary sight to have a man brought to the hospital with stab wounds, up to twenty or more in number, and the intestines lacerated and protruding from the abdomen. It is even more remarkable that many people wounded in this manner recover from these terrible injuries. Perhaps it is due to their mode of living, most people in the tropics of Mexico eating little or no meat, beans being the principal food.

When performing an entero-enterostomy, the angiotribe is applied at right angles to the axis of the piece to be removed and its blades are forced tight together; a Pagenstecher's linen thread is applied in the impression produced by the angiotribe and tied firmly. The stump is not inverted*; only lateral anastomosis is practiced; end-to-end anastomosis being rather difficult to perform by the method here described.

THE STEPS OF THE ANASTOMOSIS:

1. The gut-arms (or parts) to be united are laid side by side and approximated near their mesenteric borders by a continuous linen thread suture, passing through only the serosa, for a distance of 6 to 7 cm. This we term the "first posterior suture" and black thread may be employed for this.

2. A second continuous suture is applied parallel with the first one and very close to it; large grasps of the intestinal wall are taken up so as to effectually compress the vessels, this we term the "second posterior suture" and it may be of white thread.

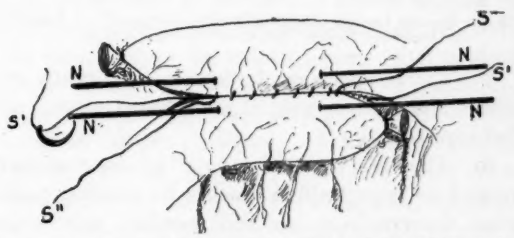

Fig. 1. Gut Arms Laid Side by Side. First and Second "Posterior Sutures," s' s' and s" s". Inserted. Knitting Needles in Place, *n—n*.

3. An ordinary long steel knitting needle is passed into the lumen of one limb of the gut and out again at the desired distance, the knitting needle being parallel with the "posterior sutures" and about 1 cm. from them; the distance between the points of entrance and exit of the needle being less than the length of the "posterior sutures."

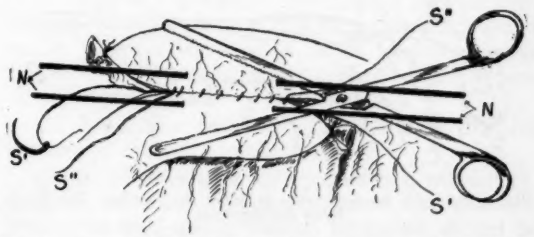

Fig. 2. Forceps Placed Beneath the Needles and Around the Bridge Which Overrides the Needles.

4. The same procedure is repeated on the other limb of gut to be anastomosed. (Figure 1.)

5. The needles are now brought close together and held securely.

6. A long narrow-bladed forceps is placed *beneath* the needles (Figure 2), and, compressing the opposed portions of the intestines, is securely locked. (Figure 3.)

* This method was described by Alex. Ferguson of Chicago six or seven years ago. Ferguson, however, does not employ an angiotribe but merely a forceps. Lilienthal (AMERICAN JOURNAL OF SURGERY, March, 1909), does not seem to know of Ferguson's work.

7. A Paquelin cautery burns away that portion of the intestine, which "bridges" over the needles. Burn until the needles are released. (Figure 4.)

8. The "second posterior suture" (white thread) is now continued around in front until it reaches the starting point; this is the "first anterior suture." (Figure 5.) The handle of the compressing forceps should always be placed at the starting point of the intestinal suture.

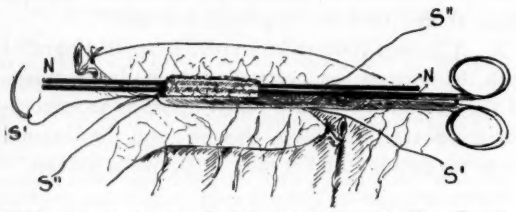

Fig. 3. Forceps Locked. Knitting Needles brought Close Together. Intestinal "Bridge" Ready to be Burned Away.

9. The compressing forceps is now gently removed and the free ends of the "second suture" are tied together.

10. The "first posterior suture" is now continued around in front until it reaches its starting point, when the free ends are tied together; this is the "second anterior suture." (Figure 6.)

As may be seen, the method is rather simple and does not require much expertness. In the article in the AMERICAN JOURNAL OF SURGERY, June, 1906, the procedure is the same as in this article up to step 6, when instead of a forceps being applied, a silk-worm gut suture passes backward and forward

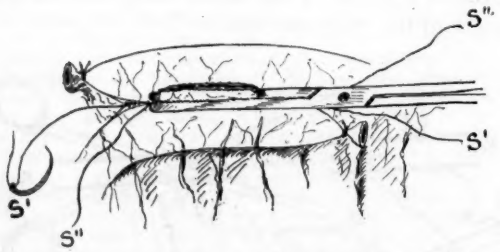

Fig. 4. Bridge is Burned Away, Releasing the Needles. This Establishes the Openings.

through the opposite intestinal walls in such a manner that the suture always runs under the knitting needle; the stitches are taken close together; the suture is pulled taut and the intestinal "bridge" over the needle is scraped away until the needles are released. The "posterior sutures" are now continued around as described in Steps 8 and 10. It occasionally happens that some slight hemorrhage takes place, when the suture-method is employed; but with the forceps method absolutely no hemorrhage can obscure the suturing and no time has to be given up to wiping the blood away.

Another practical point in the needle-and-forceps-method is that by lifting up the handle of the forceps, the whole field of anastomosis is brought into full view, thus facilitating the suturing of the opposed intestinal parts.

We have several times employed fine iodized or

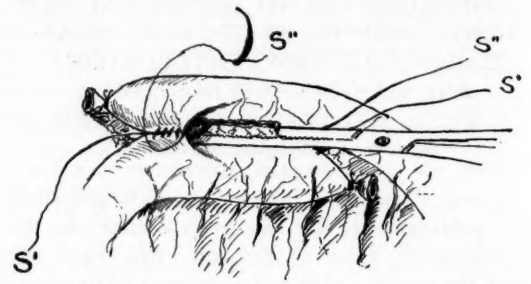

Fig. 5. Serosa Jouned Around the Forceps, Completely Burying it Between the Opposed Intestinal Walls ("First Anterior Suture").

chromicized catgut for the "first posterior suture" and strong linen or silk thread for the inner or "second posterior" ("first anterior") suture."

At autopsy on several dogs, months after performing anastomosis according to this method, it was observed that absolutely no thread remained in the intestinal wall as early as three months after the operation. By making the stoma sufficiently large there is no danger of contraction taking place. (Such contraction was observed in one case in our hospital, where a gastro-enterostomy was per-

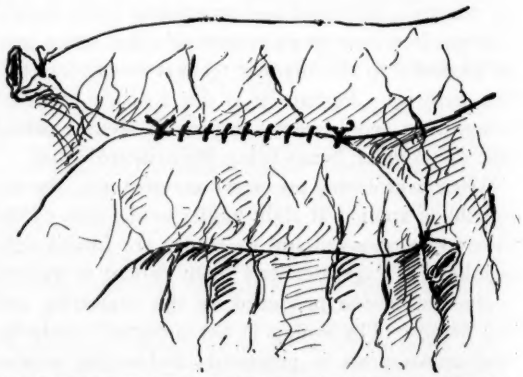

Fig. 6. Forceps Removed. "First Posterior Suture" Continued in Front as "Second Anterior Suture." Anastomosis Completed.

formed with the Murphy button. Three months after, the opening had contracted so that hardly a lead pencil could pass through it.)

Aside from the asepticity of the method here described, it has the advantage that no foreign body is left in the intestine to cause obstruction as in one case, where one of us (V. P.) had to remove a

Murphy button put in some six months previously by a very competent surgeon. If buttons or bobbins must be employed, we always prefer some absorbable substance, *e. g.*, the decalcified bone button of Dr. Jacob Frank, of Chicago.

Up to date the needle-and-forceps method has been employed in thirty-two cases of gastro-enterostomy (anterior or posterior) and entero-enterostomy.

THE OCHSNER TREATMENT OF APPENDICITIS.

JAMES U. BARNHILL, M.D.,
COLUMBUS, OHIO.

The great majority of physicians understand Dr. Ochsner's postulates and "thousands of surgeons faithfully follow them" in treating appendicitis. The treatment has been publicly endorsed by the Mayos, Murphy, Morris, Matas, Richardson, Rodman and many others. Nevertheless, we hear it frequently stated that the treatment is misunderstood, that it is made the excuse, by many physicians, for advising against operation, and that when carried out it often results in defeating an operation for the reason that the patient, feeling himself relieved, refuses to submit to the removal of the appendix.

At the last meeting of the American Medical Association in 1908 R. T. Morris, in closing the discussion of his own paper on "Appendicitis" said, "The Ochsner treatment is one of the greatest points ever made in the history of appendicitis, but the Ochsner treatment, as comprehended by the average physician of New York, is damnable." C. E. Thompson said, in the same discussion, "The Ochsner treatment means, to the general country practitioner, do not operate; many of these practitioners have always been opposed to surgery and now they assert that a great surgeon in Chicago is saving nearly all of his cases by not operating on them. The treatment has been misunderstood and has thus been the cause of filling many untimely graves."

In the above statement of Morris we have the highest testimony of the value of the Ochsner treatment, together with his condemnation of the misuse of it by the average physician. While we do not believe there is such a lamentable misconception of the treatment here as Dr. Morris would lead us to believe exists in New York, yet I feel that there is such a degree of misunderstanding in reference to it as to justify a brief consideration of the subject at this time.

Ochsner described his treatment in full before the Chicago Medical Association, October 10th, 1900, giving in this original paper the results of eight years' employment of the treatment. At that time he set forth certain propositions in reference to the treatment which were very widely quoted in medical journals. Greater prominence was given to his method when he presented it in his Chairman's address before the Section on Surgery at the Fifty-second Annual Meeting of the American Medical Association at St. Paul in 1901. He deserves great credit for systematizing the results of his own observation and experience, for calling attention to the admirable protection which nature affords the appendix by its anatomical surroundings, and for the danger occasioned by peristaltic motion in the small intestine. In his second paper he described (a) the attempt on the part of nature to close the ileo-cecal valve to prevent the passage of the intestinal contents into the inflamed area, (b) the movements of folds of the omentum toward and around a seat of injury, (c) the increased peristalsis occasioned on the introduction of food into the stomach (d) the exudate and new formation thrown out by the peritoneum to wall off the inflamed appendix, (e) the harmful influence which cathartics exert by disturbing the inflamed tissues, and by carrying infectious material to other parts of the peritoneal cavity, (f) the toxic character of stomach contents and (g) the danger of operation at the acme of septic intoxication.

We may best describe the treatment by giving his conclusions or postulates:

1. Patients suffering from chronic recurrent appendicitis should be operated upon during the interval.

2. Patients suffering from acute appendicitis should be operated upon as soon as the diagnosis is made, provided they come under treatment while the infectious material is still confined to the appendix, if a competent surgeon is available.

3. Aside from insuring a low mortality this will prevent all serious complications.

4. In all cases of acute appendicitis, without regard to the treatment contemplated, the administration of food and cathartics by mouth should be absolutely prohibited and large enemata should never be given.

5. In cases of nausea or vomiting, or gaseous distention of the abdomen, gastric lavage should be employed.

6. In cases coming under treatment after the infection has extended beyond the tissues of the appendix, especially in the presence of beginning diffuse peritonitis, fasting and gastric lavage should always be employed until the patient's condition makes operative intervention safe.

7. In case no operation is performed, neither nourishment nor cathartics should be given by mouth until the patient has been free from pain and otherwise normal for at least four days. The same practice should be followed after operation.

8. During the beginning of this treatment not even water should be given by mouth, the thirst being quenched by rinsing the mouth with cold water and by the use of small enemata. Later small sips of very hot water, frequently repeated, may be given, and still later small sips of cold water. There is danger in giving water too freely, and there is great danger in the use of large enemata.

9. All practitioners of medicine and surgery, as well as the general public, should be impressed with the importance of prohibiting the use of cathartics and food by mouth, as well as the use of large enemata, in cases of patients suffering from acute appendicitis.

10. It should be constantly borne in mind that even the slightest amount of liquid food of any kind given by mouth may give rise to dangerous peristalsis.

11. The most convenient form of rectal feeding consists in the use of one ounce of one of the various concentrated liquid predigested foods in the market, dissolved in three ounces of warm normal salt solution, introduced slowly through a soft catheter inserted into the rectum a distance of two or three inches.

12. This form of treatment can not supplant the operative treatment of acute appendicitis, but it can and should be used to reduce the mortality by changing the class of cases in which the mortality is greatest into another class in which the mortality is very small after operation.

To conclusion 8 are now regularly added the method, introduced by Murphy, of administering a continuous enema of normal salt solution, and, in case of diffuse peritonitis, the Fowler position.

The clearness of statement in these conclusions should be a guarantee against misconception or misunderstanding, and the soundness of the principles upon which they are based should secure for them general recognition.

One misconception relates to the extent to which the treatment applies. Physicians generally seem to assume that the Ochsner treatment refers to fasting and rest without reference to other phases of the treatment. They fail to note that the second postulate recommends early operation when practicable in all cases, and that other postulates cover indications for treatment of the severe as well as the interval cases.

There is no suggestion in these postulates that this treatment is to serve as a substitute for operation. It is from beginning to end surgical, or a preparation for surgical measures. The starvation part of it should perhaps be called Ochsner's preparation rather than his treatment; for his treatment proper includes operation. We should bear in mind that the treatment includes preparation, operation and after-care.

It is difficult to account for the persistent misinterpretation of the author's clear statement of every detail of this treatment. The harm that some attribute to its employment is the result of its misuse rather than of any inherent defect in the treatment itself. Here, as in many other questions relating to medicine and surgery, good judgment is a *sine qua non*. Defective judgment, as we know, may make shipwreck of any treatment and of all opportunity.

Ochsner distinctly states that all persons who have suffered from an attack of appendicitis will sooner or later come to operation. The fasting and rest so strongly emphasized in the treatment has been of very great advantage to all surgeons, whether they operate early or late for, as pointed out by Ochsner, many patients have recovered after operation because their surgeons have learned to give neither food nor cathartics after abdominal operations, so it may be said that they receive the treatment notwithstanding the operation. It is evidently to this phase of the treatment that Morris refers when he says that he prefers the quick operation with fasting, leaving the patient to his opsonins and phagocytes.

During the eight years prior to Ochsner's first publication there were no uniform plans of treatment in reference to any of the types of appendicitis. And since that time the greatest difference of opinion and practice has prevailed. Many distinguished surgeons have helped very materially in establishing certain principles of treatment; some have emphasized the advantages of quick operation with small incision for a certain class of cases; others, the advantages of the intermuscular opening; while others have insisted upon early operation for all cases; but no one except Ochsner has succeeded in formulating rules applicable to so many classes and conditions of appendicitis. In his conclusions there are, of course, no rules assumed to be applicable to all cases but certain important principles are enunciated which have a very general application and which give to the treatment a distinctive character.

We may illustrate the advance made by Ochsner over much of the teaching of the day by a brief comparison of opinions on a few important points. Compare, for instance, his positive and rational postulate that all cases seen in the first twenty-four or thirty-six hours, should, if practicable, be operated upon, with the teaching of the International Textbook of Surgery by Warren and Gould, which says

that in many mild cases operation should be delayed until the acute attack has passed; or with Robert's Surgery which says, "If the symptoms show little increase in severity during the first twelve hours it is probable that the case will do well and that operation will not be required;" or with the English surgeon, Walsham, who says that "in mild cases he would not follow the American dictum, to operate always within the first twenty-four hours, but wait and operate in the interval;" or with Vaughan's advice that "if for any reason it is decided not to operate in the early stages of the disease the patient should be freely purged with sulphate of magnesia;" or with Tiffany who says that "the medical treatment should consist, among other things, of free purgation and the appendix, provided the disease is advancing, should be removed, preferably within the first two or three days;" or with DaCosta, that "in an ordinary mild case it is best to defer operation, experience showing that purging by means of Epsom or Rochelle salt is beneficial;" or with the American Text-Book of Surgery which says, "in cases of mild type, seen at the start, the treatment should consist, among other things, in moderate purgation by calomel in fractional doses followed by salines or by castor oil and enemata." It will be seen from these brief quotations that in the matter of early operation he is more radical than many of the so-called radicals, and infinitely saner in refraining from the use of purgatives and in the withholding of food.

A few quotations from the same authors will further illustrate the truth of the latter statement. Thus, Robert's text-book says nothing about dieting or fasting; Von Bergmann says only, that "the diet should be restricted;" Brewer, that "catarrhal appendicitis which has passed the acute stage may be treated by rest, ice-bag, catharsis and an opiate, if necessary, until the attack has subsided;" and Warren who says that "when nausea and vomiting has ceased nourishment may, of course, be given."

The contrast between Ochsner's treatment of perforative and gangrenous appendicitis and that prevalent a few years ago, still advocated in most of our current text-books and practiced by many surgeons, brings the advantages of the former treatment into relief.

Von Bergmann recommends for these cases with pyrexia, uniform distention, tenderness and rapid pulse, "operation, preferably not later than the second or third day;" DaCosta, "if there is marked tympanitic distention operate at once"; Walsham, "In acute perforation with gangrenous appendix immediate operation gives the only chance, and in suppurative cases operate at once;" Rose and Carless, "In case of perforation in the first, second or third days, provided it is advancing, operate." American authors are not so ready to recommend prompt operation in this condition as they were a few years ago, doubtless largely due to Ochsner's teaching on this subject.

To review briefly the Ochsner treatment:—In all cases of acute appendicitis all food, water and cathartics by mouth are prohibited. If nausea persists gastric lavage is repeated once or twice at intervals of two to four hours. In all cases seen within thirty-six hours, which give no evidence of perforation or diffuse peritonitis, immediate or early operation is performed. In cases in which recovery seems doubtful the operation is to be postponed and the Ochsner starvation preparation carried out, and in such cases a late operation is to be performed with complete removal if infection is confined to the appendix, or if circumscribed abscesses have developed they are to be opened and drained. The advantage of this treatment is that there is almost no mortality. The patients are promptly cured, suffering is reduced to a minimum and complications are not liable to occur.

Another class deriving great advantage from this treatment includes those suffering from gangrenous or perforated appendicitis. These patients usually have high temperature, marked tympany and rapid pulse; there is complete obstruction of the passage of gas or feces, nausea or vomiting and marked meteorism; the pulse is small and quick, respiration rapid, parietes over appendix tense. "The patient," says Ochsner, "is in the condition in which I formerly operated at once—day or night—as a last resort, only to find that it was too late in more than one-third of the cases, the mortality increasing with the time that had elapsed since the beginning of the attack." This is the class of cases of which Richardson has said, they are "too late for an early and too early for a late operation."

In cases of perforative or gangrenous appendicitis, with and without abscess, concerning which there is perhaps the greatest diversity of opinion, the Ochsner treatment has succeeded in greatly reducing the mortality. In a series of a thousand consecutive cases of appendicitis, reported by him, there were 55 cases of perforative or gangrenous appendicitis with abscess belonging to this class; all treated by the starvation preparation and subsequent operation without a death. In all of these cases food by mouth and cathartics were prohibited, gastric lavage was employed, exclusive rectal feeding was instituted and continued for one week or

longer until they were normal as regards temperature, pulse and absence of pain in the region of the appendix.

The operation was performed in most cases within four days after admission to the hospital; in others the period of preparation treatment was longer. In all cases the appendix was completely surrounded by omentum and new wall formation, effectually circumscribing the infectious material.

In the same series there were 117 cases of acute perforative or gangrenous appendicitis with peritonitis and abscess, admitted to the hospital after the third day from the beginning of the attack. There were but four deaths. All of these patients had received, prior to coming to the hospital, cathartics and some food.

The mortality in these 172 cases of acute perforative or gangrenous appendicitis was only 2.9 per cent. It is in this class of cases that we formerly had such a high mortality, variously estimated from twelve to eighteen per cent.

Of twenty-six cases of acute appendicitis with diffuse peritonitis on entering the hospital, treated by this method and operated upon, there were but three deaths, a mortality of 11.5 per cent., against the very high mortality from the most favorable statistics of cases operated as soon as the diagnosis is made.

Of one thousand cases thus treated by Ochsner from July 1, 1901, to April 1, 1904, including the cases reported above, the mortality was but 2.2 per cent. This list included seven cases of diffuse peritonitis not operated upon because they were in a dying condition when admitted to the hospital. Omitting these cases there were 993 cases operated upon with but fifteen deaths, a mortality of 1.5 per cent. Leaving out the 540 cases of chronic appendicitis and interval operations, Dr. Ochsner's percentage of mortality for operations, both early and late, in acute appendicitis is 2.6. Since then the mortality rate has been still further reduced.

About the time of the publication of Ochsner's report, Richardson reported his elaborate study of 750 cases in which operation for acute appendicitis was done by the rules then generally in vogue, showing a mortality of eighteen per cent.

My own results in applying this treatment have been most satisfactory and have convinced me that the Ochsner treatment of appendicitis is founded upon sound surgical principles—principles which apply in some measure to many other inflammatory processes.

The more carefully we study these principles and the more clearly we see them worked out in actual practice, the more will we realize their truth and vital importance. The postulates should be studied as a whole and they should be studied in connection with Ochsner's other classical and epoch-making papers and reports on this subject. Thus will the misconception, which to the shame of the profession is quite too general in reference to this treatment, be corrected. Then shall we realize that the Ochsner treatment is not a medical treatment but surgical from beginning to end; that to withhold food and lavage the stomach is to secure rest and conserve strength; that to limit the peristalsis and thus give the inflamed appendix and its environment a rest, is just as rational as to splint a fracture or to exclude a light from an inflamed iris or retina.

Then shall we understand that the Ochsner treatment is no substitute for operation but includes both preparation for operation and the operation itself, and that preparation here is just as essentially surgical as the preparation for other operations, albeit less mechanical. We shall then realize that the points urged in these postulates have a broad application and, taken separately or collectively, are of vital importance no matter what plan of treatment is followed.

Then we shall realize, too, that Ochsner is not timidly conservative but safely radical, for he declares, in these postulates, that patients suffering from acute appendicitis should be operated upon as soon as the diagnosis is made providing they come under treatment while the infectious material is still confined to the appendix and he is progressive and bold enough to delay operation in perforative and gangrenous cases until nature can wall off the infected area and raise the patient's power of resistance, while others are maintaining that immediate operation gives the patient his only chance.

And he is staunch enough and loyal enough to his convictions not to be persuaded into operating at an unfavorable time simply for fear that the patient, if relieved of pain, may refuse operation later.

At present almost all appendicitis patients have had food and cathartics before coming under the surgeon's care. This was true of Ochsner's one thousand cases. The physician sees them a day or two before the surgeon and this is admittedly a critical time. With this treatment, notwithstanding the damaging influence of food, water and cathartics, early operations have reduced the mortality to less than one-half of one per cent.; and in all cases it has reduced it approximately from 12 to 2.5 per cent. How much more might we reduce it if physicians generally as well as surgeons would all apply the principles of this treatment in the critical hours

before the patient enters the hospital, as well as thereafter. Is it not rational to believe that we should thus still further reduce the mortality from this disease?

THE ORBITAL ROUTE TO THE ACCESSORY SINUSES.*

PERCY FRIDENBERG, M.D.,
Junior Surgeon, New York Eye and Ear Infirmary,
NEW YORK CITY.

(*With illustrations by the author.*)

The early records of accessory sinus disease are found in ophthalmologic or surgical literature and deal mainly with ocular and orbital complications. The interest of ophthalmologists in this question is not merely one of ancient history. Through force of circumstances and the practical requirements of such conditions as fistula of the lid, sub-periorbital

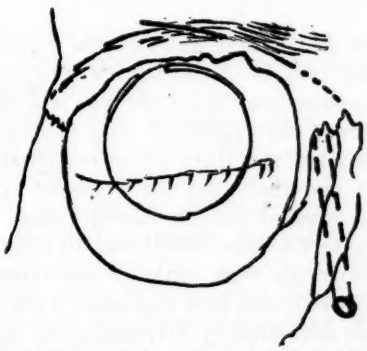

Fig. 1. Ogsten-Luc. Opening (5 mm.-15 mm.) Inner End of Sinus. Curettage of Duct. Drain Into Nose.

abscess, pre-lachrymal tumor and phlegmon, an external route was thrust upon them which the rhinologists have subsequently developed, but which many, for some reason, still hesitate to adapt. The endonasal route is still favored and recommended for the "broad opening" of the sinuses in cases of orbital complication, even by those authors who have contributed widely to the study of the involved and variable topography of these structures.

Even in the development of the external operations there has been a fear of directly attacking the accessory cavities by their orbital walls, and this led to trephining or to small and ineffectual openings, such as those of Ogston, Praun (Fig. 1), into the anterior wall of the frontal sinus, attempts to reach the deep orbital sinuses (ethmoid and sphenoid) through the maxillary antrum or frontal sinus, and finally, to complicated procedures of major surgery, such as decortication of the face, osteoplastic resection of nasal bones (Fig. 2), superior maxilla, hard palate (Goris, Moure, Bardenheuer, Gussenbauer), all of which were bloody, serious or disfiguring. Even comparatively recent proceedures such as those of Jansen, Riedel, Kuhnt, and the first operation of Kilian, failed to effect a

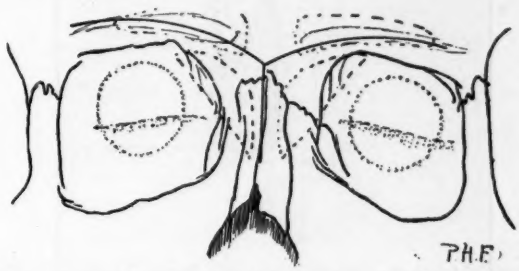

Fig. 2. Gussenbauer. Osteoplastic Resection of Fronto-Naso-Ethmoidal Structures.

wide exposure of the orbital walls, especially on the inner side and compensated by extensive removal of the frontal process of the superior maxilla and even of the nasal bones in order to ensure drainage. Two structures at the orbital margin dominated the entrance to the operative field, the pulley for the superior oblique and the lachrymal sac. Fear of injuring these parts seems always to have been a stumbling block to those who were not surgically familiar with the adnexa of the eye and the conditions at the orbital margin. The ophthalmologists were not slow to discover that both these structures could be avoided or sidetracked by appropriate measures. The spine for

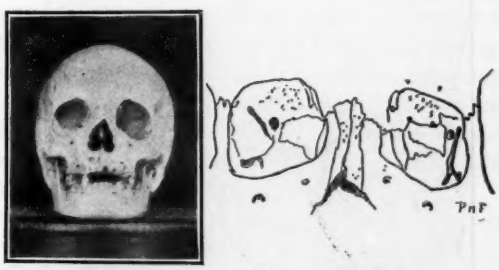

Fig. 3. Inclined Orbits. Marked Supra-trochlear Spine, Particularly Left.

the trochlea (Fig. 3) is the exception rather than the rule, as it is found in only from 7 per cent. to 12 per cent. of the cases, according to different anatomists, and, strangely, is more often missing on both sides than on one. (In the Cornell collection of about sixty crania, I found but two with a spine.) The spine can be easily detached with a narrow chisel or gouge, preserving its relation with

* Read before the Section on Laryngology and Rhinology, New York Academy of Medicine, April 28, 1909.

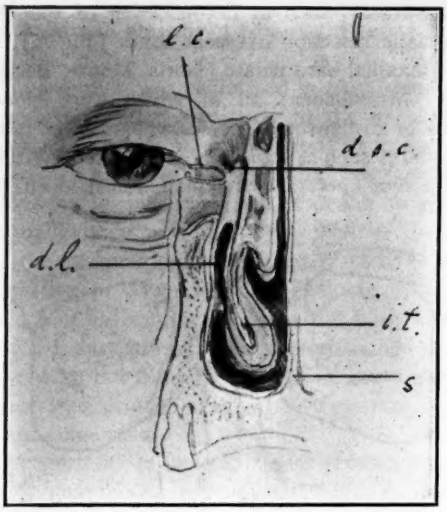

Fig. 4. Lachrymal Passages. Section. After Gegenbauer. *l. c.*, Canaliculi; *d. s. c.*, Dome of Sac; *d. l.*, Lachrymal Duct; *s.*, Septum; *i. t.*, Inferior Turbinate.

the periorbita, and laid back in its place at the completion of the operation. Where there is no bony spine, the careful elevation of the periorbita at the inner upper angle of the margin is sufficient to preserve the relations perfectly.

A skin incision down to the bone, is important, and this will also ensure, in many cases, the possibility of separating the upper part of the lacrimal sac (Fig. 4), from its niche in the lacrimal fossa (12, Fig. 5), and laying it back, provisionally. Where this is impossible or is rendered inadvisable

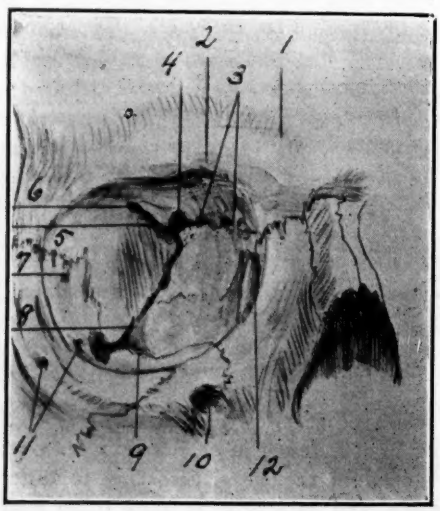

Fig. 5. Bony Orbit (after Merkel). 1, Frontal Eminence; 2, Supra-orbital Notch; 3, Ethmoidal Foramina; 4, Optic Foramen; 5, Spine, M. Rect. Ext.; 6, Sphenoid Fissure (Sup. Orb.); 7, Zygomatic Foramen; 8, Spheno-maxillary Fissure (Inferior Orbital Fiss.); 9, Infra-orbital Canal; 10, Infra-orbital Foramen; 11, Orbito-malar Foramen; 12, Lachrymal Fossa.

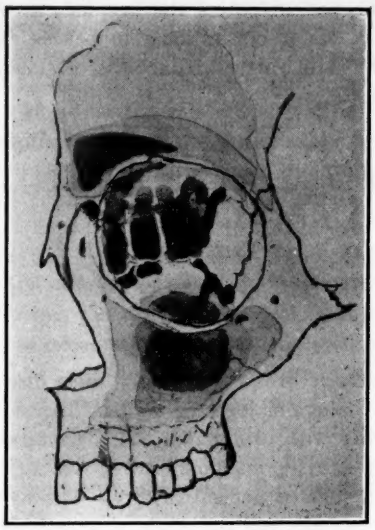

Fig. 6. Front View of Orbit. Showing Relation of Small (dark shaded), Middle Sized (medium) and Large (faint) Accessory Cavities to Its Walls.

on account of diseased walls, or the existence of suppurating cells in the immediate neighborhood, the tear passages may be cut through without hesitation. From our experience with extirpation of the sac we know that there are no complications to be feared and that even the obstinate epiphora which was expected does not usually follow.

Removal of the inner orbital wall, os planum and lamina papyracea with complete exenteration of the ethmoid cells and wide exposure of the frontal antrum, as advocated by Hartmann, has been the ophthalmologist's operation of choice in combined

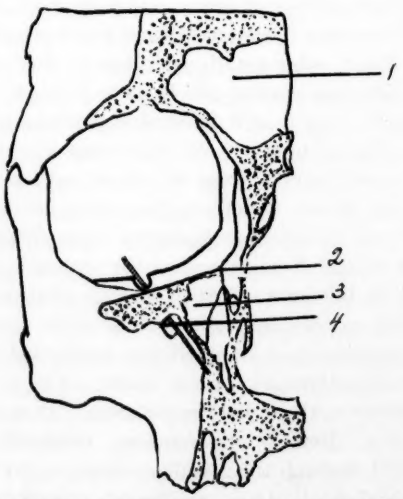

Fig. 7. Frontal Section of Orbit (after Dwight). At Orbital Margin. 1, Frontal Sinus; 2, Lachrymal Canal; 3, Maxillary Antrum; 4, Probe in Infra-orbital Canal.

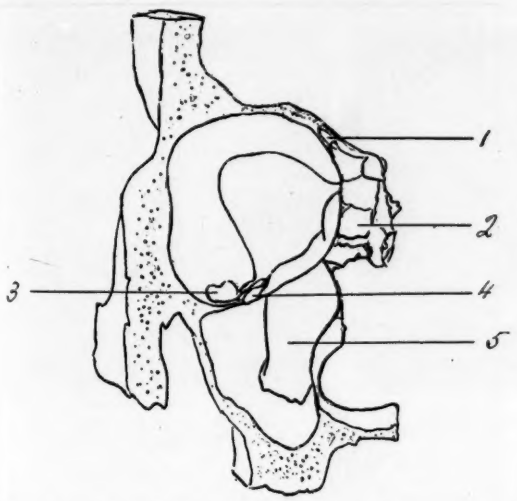

Fig. 8. Frontal Section of Orbit (after Dwight). About Middle of Orbit. Through Zygoma. 1, Frontal Sinus, Post. Recess; 2, Ethmoid Cells; 3, Spheno-maxillary Fissure; 4, Infra-orbital Canal; 5, Maxillary Antrum.

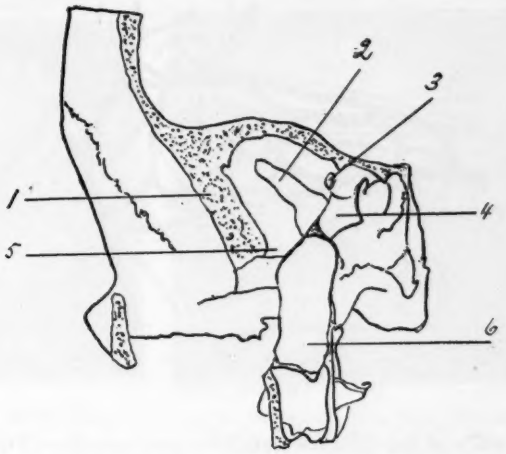

Fig. 9. Frontal Section of Orbit (after Dwight). At Apex. 1, Outer Wall of Orbit (Great Wing of Sphenoid) Bounding Middle Fossa; 2, Sphenoidal Fissure; 3, Optic Foramen; 4, Ethmoid Cells; 5, Spheno-maxillary Fissure; 6, Maxillary Antrum (Pterygoid Recess) Above Molar Tooth.

affections of the sinuses for years. We might well speak of these spaces as accessory to the nose and accessible to the orbit.

Objections to the intranasal route in extensive accessory sinus disease are based on the difficulty of finding the openings even in normal cases, the inefficacy of syringing in many cases, and the dangers of more thorough surgical procedures. Among the latter we may mention uncontrollable hemorrhage, injury to optic nerve, carotid, pterygo-palatine vessels and nerves, in curetting the sphenoid cavity, penetration of cranial cavity and frontal lobe from a defective posterior frontal sinus wall or lamina cribrosa, meningitis after tampon, after syringing, penetration of the floor of the orbit in an attempt to enlarge the maxillary ostium of the antrum, and so on. Danger of chiseling about the orbital margin in removing thick bone of the frontal process should also be borne in mind. Fissure extending into the apex of the orbit and sudden blindness, even contra-lateral, from direct compression of the nerve within the optic canal has been recorded, an added reason for the orbital route through thin walls. The danger of such accidents, as well as of otitic infection, such as rather too frequently follow intranasal operations, seems decidedly greater than any possible injury to the orbit or its contents in the course of the external operation. First, the globe is held away and the periorbita carefully detached from the inner and upper wall; secondly, we proceed successively to open cavities which are seen before they are attacked; third, in case of post-operative infection we have a large communication with the nose for drainage, no necessity for tampons with accompanying stagnation, and, finally, the thoroughness of removal of diseased tissue is the best possible guarantee not only against relapse but against infection of neighboring structures. The wall of the orbit is the key to the serious complications of accessory sinus disease, pathologically, and to their cure, topographically and surgically.

The relations of the accessory sinuses to the

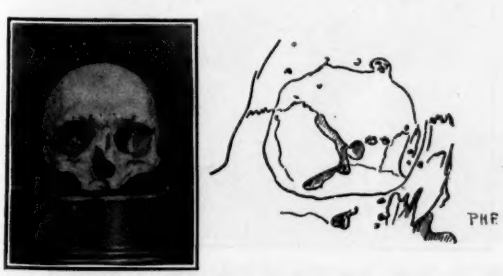

Fig. 10. Large Orbital Fissures. Numerous Accessory Foramina, Particularly in Roof of Orbit, on Brow, in Lachrymal Fossa, and Below Inferior Orbital Margin.

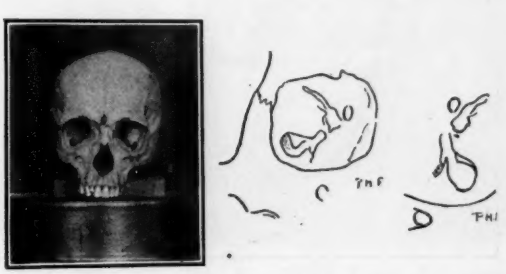

Fig. 11. Unusually Large Orbital Fissures. Anterior Oval Aperture of Spheno-maxillary (Inf. Orbital) Fissure, R. 10 mm., L, 8 mm. "Extra-orbital" Lachrymal Fossa.

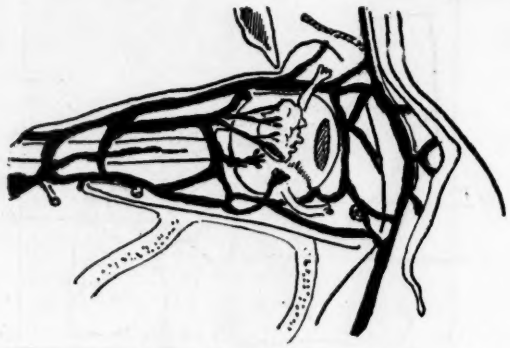

Fig. 12. Orbital Veins Showing Anastomoses with Blood Supply of Lids, Cheeks and Brow, Terminating Posteriorly in the Cavernous Sinus.

walls of the orbit are extensive and variable. (Figs. 6-9.) Almost the entire roof of the orbit may be formed by the lower wall of the frontal, its floor by the upper wall of the maxillary, antrum, while the ethmoid cells in every case form by far the greater part of the inner, or nasal, boundary. The openings into the orbit from the cranial cavity and spheno-palatine fossa frequently attain such dimensions that the terms "foramen" and "fissure" no longer apply, and the normal channels through the bony wall for vessels and nerves leading into the cranial cavity or into accessory sinuses are much more numerous than is usually supposed. (Figs. 10, 11.) A study of a large collection of crania* shows that

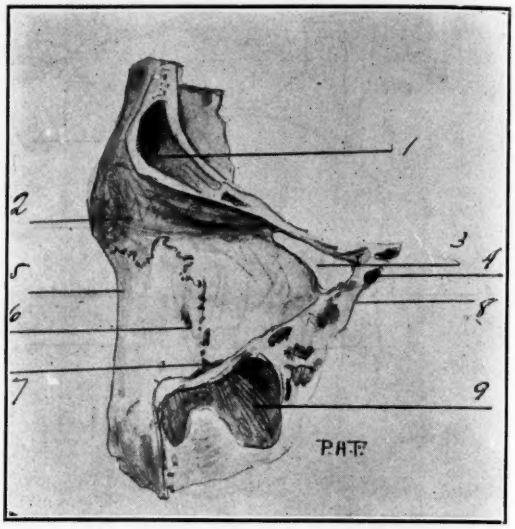

Fig. 14. Orbit. Side View of Temporal Wall. 1, Frontal Sinus; 2, Roof; 3, Sphenoid Fissure; 4, Optic Foramen; 5, Outer Wall; 6, Zygomatic Foramina; 7, Spheno-maxillary Fissure; 8, Floor of Orbit; 9, Maxillary Antrum.

gaps in the sutures, dehiscences, congenital or acquired, and perforations are numerous, the zygomatic and temporo-orbital foramina often large and multiple, while the roof of the orbit, near the

* Through the kindness of Dr. Irving Haynes the large and interesting collection of the Anatomical Museum of Cornell University, Medical Department, was placed at my disposition for study and measurements. Photographs and original sketches from these skulls and from a fresh head prepared to show the orbital route to the sinuses form the basis of the illustrations for this article.

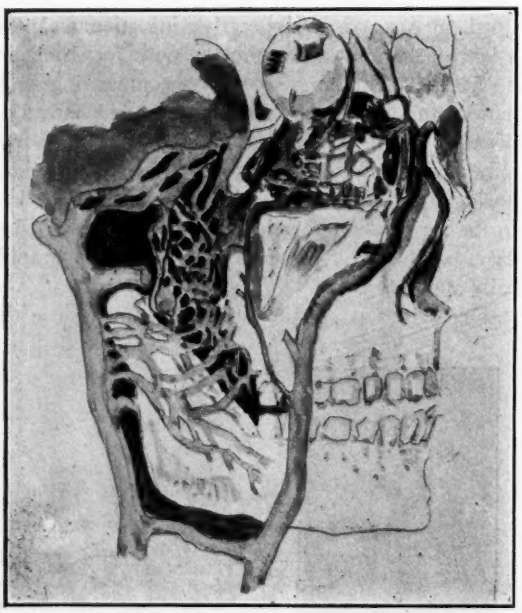

Fig. 13. Blood Supply of Orbit, Showing Relation to Veins of Maxilla, Antrum and Pterygoid Fossa.

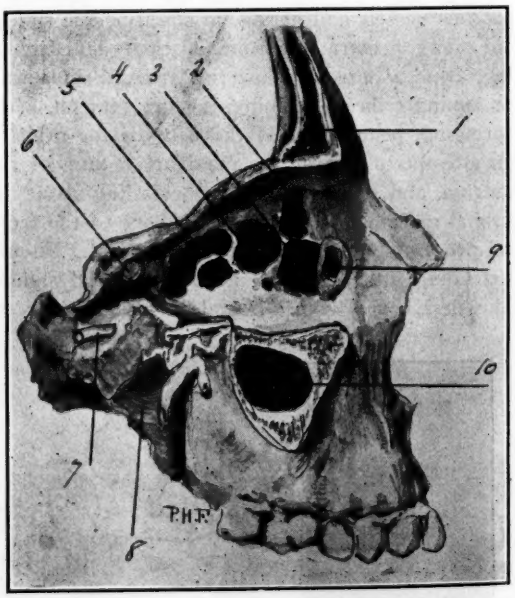

Fig. 15. Orbit. Side View of Nasal Wall. 1, Diploe of Frontal Bone; 2, 3, 4, 5, Ethmoid Cells; 6, Optic Nerve (Sphenoid Sinus Below); 7, Superior Maxillary Nerve; 8, Spheno-palatine Fossa; 9, Lachrymal Sac; 10, Maxillary Antrum.

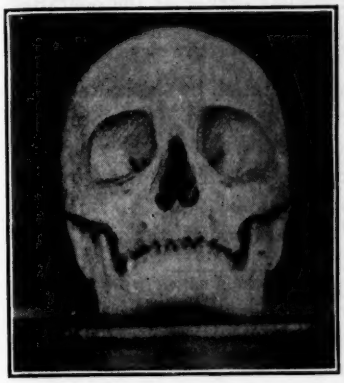

Fig. 16. Horizontal Orbits. Flat Brow. No Indication of Supra-orbital Notch.

Fig. 17. High Orbits. Smooth Brow.

Fig. 18. Oxy-cephalic, Steep Skull. Marked Obliquity of Inner Wall of Orbit. Numerous Accessory Foramina.

margin, is often riddled with small foramina, and in one or two cases I have found it to be actually cribriform. The vessels which leave the orbit by the anterior and posterior ethmoidal foramina (A. et Vv. ethmoid, ant. et post; R, nasalis s. nasociliaris, n. trigemini), communicate directly with the anterior cranial fossa and the nasal cavities. The orbital veins (Figs. 12, 13), take up the return flow of blood from the lips and cheek, angular region between eye and nostril, interior of nares, brow, and front of scalp, communicate with the branches of the posterior facial which supply the upper jaw, teeth, and maxillary antrum, anastomose freely with the pterygo-palatine and with the spheno-palatine plexus and empty, via the ophthalmic vein, into the cavernous sinus.

There is a striking and interesting analogy with the middle ear and mastoid which extends to many points in the pathology and treatment of accessory sinus disease. Thus, drainage through the normal channels does not always prevent retention and infection; intranasal cutting operations, like paracentesis, are often ineffectual; the extension of disease to the orbit or to the meninges generally takes place via diseased bone or by pus perforation, more rarely by venous channels. The treatment of the intracranial complications of accessory sinus disease is in its infancy, but the broad surgical procedures which have been systematically applied by otologists in their field must have similar results in diminishing the number of fatal cases of rhinogenous brain abscess, meningitis, and, let us hope, of sinus thrombosis. Considering the lack of characteristic symptoms, the latency and the variable course of these complications, we may be excused for overlooking an intracranial infection for a time, but, given a bone diseased to the dura, we cannot be excused for failing to clean it out thoroughly, nor for being deterred, after tracking the infection to a frontal lobe abscess, from free incision and eva-

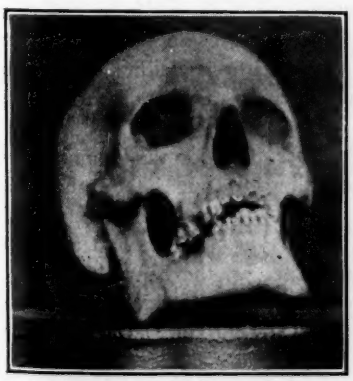

Fig. 19. Prognathic Skull, Probably Negro. Large and Massive Inferior and Superior Maxilla. Numerous Small Apertures (Vascular Pori) in Anterior Part of Orbital Roof.

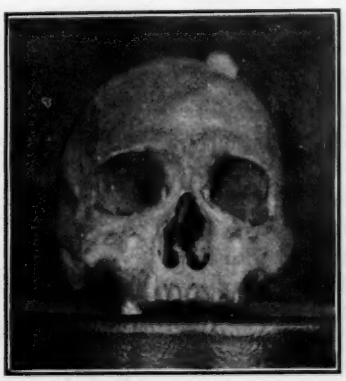

Fig. 20. Indian Skull. Broad Facial Skeleton. Thick Outer Orbital Wall. "Extra-orbital" Lachrymal Fossa.

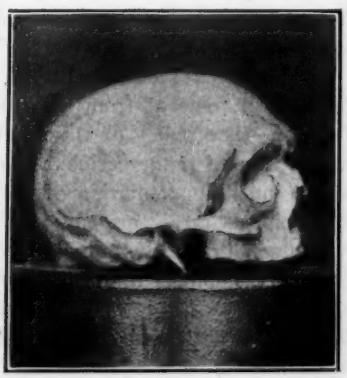

Fig. 21. Marked Frontal Protuberance. Heavy Orbital Margins. Zygomatic Foramina (2).

cuation with drainage at the lowest possible point.

The apparent rarity of rhinogenous intracranial complications is partly explained by the fact that until recently, the nose and accessory sinuses were not included in the routine of post-mortem examinations. Frontal lobe abscess may give slight symptoms, if any, and focal indications are rare. Rhinogenous meningitis is like any other meningitis, and the headache, fever, and other subjective symptoms have been frequently attributed, no doubt, to severe but still uncomplicated accessory sinus disease or, as has occurred in otitic complications, to typhoid, malaria, and other systemic diseases.

Conclusions. The orbital route is imposed on us by such complications as fistula, protrusion of any sinus wall into the orbit whether with or without exophthalmos and dislocation of the globe, unmis-

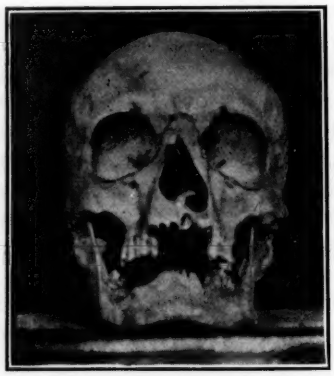

Fig. 22. Marked Supra-orbital Notch. Accessory Infra-orbital Foramen.

takable evidence of sub-periorbital abscess, or of general orbital cellulitis of accessory sinus origin, and by cerebral symptoms, persistent headache and pain, progressive blindness or optic nerve affections of similar origin, which do not yield promptly to intranasal treatment.

The lacrimal sac need not be considered. Its provisional removal from the fossa is not always feasible. The pulley of the superior oblique need not be injured if the periobita is carefully elevated at the inner upper margin of the orbit. A trochlear spina is rarely present, and may be detached with a small chisel if intimately connected with the periorbita. Diplopia rarely follows the orbital operation as performed by ophthalmologists, but has been noted not infrequently in the other external operations.

The free detachment of the periorbita at the inner and upper border of the orbital margin and for some distance along the inner and upper wall is a *sin qua non* for a complete survey of the operative field and for a consequently complete and satisfactory operation.

Early and thorough operation by the route of the inner and upper orbital wall, in the appropriate cases, may be relied upon to remove the source of infection in the accessory cavities and to reduce the number of orbital complications, of rhinogenous blindness, and of intracranial infections.

TROPHIC JOINT DISEASES.*

MAYNARD A. AUSTIN,

Associate Professor of Surgery, Indiana University, School of Medicine, Indianapolis, Ind.

Etiology.—We are so accustomed to associate any trophic lesion with nerve degeneration that we have almost forgotten that a true trophic disturbance may be due to any condition that induces faulty metabolism. This may come from either a disturbance in the blood supply to a part or to some nerve degeneration.

Joint diseases may be classified under three great divisions. First: traumatic, which would include contusions, sprains, fractures, dislocations, loose bodies and non-infected wounds. Second: The *infectious* conditions, which would include infected wounds; the extension of an inflammation into the joint from contiguous tissues, and those so-called hematogenous infections coming from acute or chronic general diseases. In this latter class the typhoid bacillus, the pneumococcus, the gonococcus, the tubercle bacillus and the common pus organisms are to be particularly mentioned. Some authorities place rheumatism in this class, but until the true etiologic factor in this disease has been isolated, it is just as well to consider it in the class of unknown infections, such as smallpox, measles, scarlet fever and mumps, differing from the latter however in that rheumatism is neither infectious nor contagious and one attack predisposes to future attacks.

The third great class includes the trophic disturbances and according to our late authorities these are divided and include the following type of cases: 1, the atrophic type. 2, the hypertrophic type. 3, the gouty type. 4, the hemophilic type. 5, the villous type. 6, the neuropathic type. These may all be classified as chronic non-tubercular arthropathies.

Pathology.—The pathology of these non-tubercular conditions may vary from a simple mon-

* Read before the Madison County Medical Society at a special meeting on May 26, 1908.

articular serous effusion to ulceration, degeneration and complete disassociation of all the joint tissues. In some of them ankylosis occurs from the organization of the degenerated tissue. In others ankylosis may be due to the new formation of bone at the margin of the joint and beneath the ulcerated cartilage. The former type of ankylosis may also occur as a sequence to some of the acute infections while the latter exhibits itself as the characteristic feature of those conditions which we term senile coxitis, spondylosis deformans and Heberdens nodosities. The fungous type exhibits itself in relaxed and weakened joints and where the extra irritation permits an overgrowth of synovial membrane. When these overgrowths form tags they may be pinched off and become the so-called joint mice. Pieces of cartilage or bone may also be separated in this manner and form free bodies in the joints.

Diagnosis.—The atrophic and hypertrophic type of joint dystrophies are classified under the general name of arthritis deformans. In this condition the cartilage is softened, fibrillated and absorbed and the bone ends may be smoothed and entirely bared of cartilage. At the side of the joints, however, there is an irregular proliferation of cartilage cells producing nodes that later ossify. Accompanying this condition there is a thickening of the ligaments and atrophy of the bones and muscles. According to its occurrence it has received a number of special names. There is an acute progressive form occurring in young women and frequently following childbirth, and a chronic polyarticular form that may extend over years and ultimately produce that condition known as the ossified man or woman.

Another form beginning as an acute polyarticular arthritis (first described by Still, hence termed Still's disease), occurs in young children and is frequently associated with glandular and splenic enlargement. Occurring as a monarticular affection in the hips of old people, it is termed morbus-coxae senilis. Affecting the spine alone, it is termed spondilitis deformans and when it occurs as a phalangeal dystrophy it is called Heberdens nodosities. The atrophic and hypertrophic types may merge into one another, but commonly the atrophic type is polyarticular, involves the peripheral joints and is accompanied by a primary synovial effusion later succeeded by atrophy of all the contagious structures. The hypertrophic type is more frequently monarticular, effecting the hips, spine or fingers and a thickened synovial membrane and cartilage is followed by ulceration and a proliferative formation of periosteal bone at the joint margin.

Arthritis Deformans.—Rheumatoid arthritis is another name that is applied to arthritis deformans. Merrins of New York after observing forty cases of this disease describes it as follows: "By rheumatoid arthritis is meant a constitutional polyarticular disease that may occur in either sex at any period of life, but which chiefly affects young and middle-aged woman. Commencing usually in the peripheral joints, it advances symmetrically toward the trunk, in its extreme form remorselessly crippling every joint in turn, even to the jaws and vertebrae, until the patient is reduced to a pitiable condition of helplessness and deformity. The principle accompanying symptoms are irregular fever, pain, anemia, vasomoter disturbance, deranged reflexes; muscular atrophy, tremors and cramps, and in children, enlargement of the spleen and lymphatic glands."

Herrick says that the acute onset of polyarticular arthritis deformans and the fact of acute exacerbations of the more subacute and chronic forms, should be kept in mind and looked on as of not infrequent occurrence. McCrae found a sudden onset in 40 per cent. of ninety-two cases. In the acute type of arthritis deformans there is not the shifting of the process from one joint to another as in acute rheumatism. Joints may be involved successively, but the first ones involved do not clear up as they do in true rheumatic affections. A high pulse rate is a persistent factor in these trophic disturbances and cardiac complications are rarely if ever seen. Another point is that salicylates are not only useless but are contraindicated. The sweating that occurs in true rheumatism is rarely observed in the trophic disease. When the disease has existed sufficiently long for joint changes to occur there should be no difficulty in making a differential diagnosis between the true rheumatic joints and the so-called rheumatoid degeneration. In the true forms of rheumatism, the pathology is that of a chronic hyperemia. The joint may be but slightly altered, but it is customary to find a thickened and hyperemic synovial membrane associated with similar changes in the capsule and ligaments. The tendons are enlarged but there is muscular atrophy from disuse. The amount of effusion in the joint is usually small.

Gouty Arthritis.—The gouty form is frequently likened to a true rheumatism, but gout is a nutritional disorder, one factor of which is an excessive formation of uric acid. It is characterized clinically by attacks of arthritis and the deposit of urate

of soda in and about the joints. This condition was supposed to be a rare one in the United States, but a number of cases are being reported by different observers in various parts of the country so that it is probable that the disease is not only on the increase, but that it is also being recognized when it does occur. Our idea of gout is to associate a sore toe with a rich patient. Herrick reports a typical case in an old negro painter, and one case in a woman, and but two out of seven recent cases were well-to-do or high livers. The finger, knee or wrist may be the first joints attacked. And even if the great toe is involved other joints may be implicated in permanent degenerative changes. Chalk stones should be looked for not only in the ear, nose and larynx, but also in and around the fingers, wrists, elbows and knees. Long standing cases show marked arterio-sclerosis which is exhibited as an interstitial nephritis, cardiac hypertrophy, myocarditis and pulmonary emphysema.

Hemophilic Arthritis.—The hemophilic type is fortunately extremely rare. It may be monarticular or polyarticular and occurs most frequently in children; the knee is the joint usually involved. It is acute in onset and the joint is swollen, hot, painful and tender on pressure. Motion is limited and painful and recurring attacks are prone to follow the slightest injury. It is associated with effusions in the joint and ecchymoses. The disease should be recognized without much difficulty inasmuch as it is associated with a history of serious hemorrhages occurring on the inception of the slightest injury. The treatment is limited to fixation because a number of cases have resulted in death from fatal hemorrhages when a mistake in diagnosis caused operative measures to be instituted.

Neurotrophic Dystrophies.—The above includes all the trophic joint affections save the neuropathic dystrophies, and Barker has given us the following classification of joint innervations.

1. The atrophic joints associated with the cerebral and spinal palsies of children.

2. The joint disturbances associated with the bone lesions occurring in acromegaly, supposed to be a disease occurring as the result of a hyperplasia of the chromophilic cells in the pituary body.

3. The intermittent joint effusions of unknown origin, first studied by Moore, of London, but later the subject of extensive research by Benda and Schlesinger.

4. The artropathies occurring in the course of tabes dorsalis and paralytic dementia.

5. The arthropathies of syringomyelia.

6. The hysterical joints or the painful joints of psychonurotics.

Intermittent Articular Hydrops.—The birth palsies are of particular interest at present inasmuch as the surgeon has invaded this field and secured some wonderful results by nerve bridging and nerve transplantation. The intermittent joint effusions are comparatively rare, yet Healy has recently reported three cases from the Chicago Polyclinic. In this connection there may be no sign or symptoms of inflammation in the joint, although it is customary to observe a small amount of heat or redness. The amount of effusion is also variable and limited to the capsule. The amount of pain is variable and in some cases causes only slight discomfort. In some patients it is associated with prodromal symptoms and general systemic disturbances of slight character. The particular feature of the disease is its intermittent periodicity. In some cases it returns with absolute regularity, after a definite number of days or weeks, varying with the patient, but without any ascertained external cause for its recurrence and without any pathologic change in the joint as a cause or as a result of the repeated attacks. Sex and age seem to have little or no bearing as an etiologic factor. In fact the only marked coincidence in the case histories that have been reported is that of five women who were subject to this disease, who reported an immunity to its attacks during pregnancy and lactation. In some cases there is a distinct history of antecedent injury. A careful study of the case histories show a predominating nervous element in all the cases, several cases being reported in which the attacks reappear subsequent to mental excitement or as a complication in neurasthenia, hysteria, epilepsy, exopthalmic goitre and multiple neuritis. It has also been observed in morphine habitues when the drug was abstained from. The prognosis of the disease varies directly with the patient. In some cases rest and psychic treatment have produced permanent cures, in others the disease has recurred in spite of all our therapeutic resources. One case being under observation for eighteen years.

Tabetic Arthropathies.—Stumpell in his latest work on medicine says, "The most interesting trophic disturbances we meet are those associated with Tabes dorsalis." The arthropathies and osteopathies first accurately described by Charcot. Tabetic arthropathies may exhibit itself as a benign or malignant form. In the benign form it is acute in onset, possibly painless but joint and contiguous

tissues are involved in a firm swelling; there is no redness and no pitting on pressure. It may appear and disappear in the space of a few days, leaving no signs of its occurrence. The malignant form is the most commonly observed and may succeed an acute attack. Not only is the joint involved but all the contiguous tissues are greatly swollen. Pain is usually present and may be very severe. The swelling is followed by a rapid degeneration of all the joint structures. The ligaments are loosened, the bones are softened and in some cases become very friable while subluxation or dislocation may occur in a short time. Flail joints are the common result of this form of trophic disease. The disease usually appears at, or near the time of the onset of other ataxic symptoms. The knee and ankle are most commonly involved but any joint in the body may be effected. The deformities resulting in the so-called genu recurvatum, "pied tabetique" and a spinal deformity that may resemble spondilitis deformans. Syringomyelia also is complicated by joint dystrophies. The attacks are usually acute and painful. The upper limbs are more commonly involved and it is associated with those other symptoms that are characteristic of the disease. Muscular atrophy and loss of pain and heat sense, but retention of tactile and muscular sense. Atrophic and hypertrophic changes occur in the joints varying from complete destruction of bone ends to marked enlargement and ossification of the capsule and synovial membrane. The duration of the disease requires a longer time for its development than the dystrophies accompanying tabes.

Treatment.—The consideration of treatment for any and all of these conditions, at first sight would seem a matter of hopeless prospect, yet the last few years have shown so many advances in our knowledge of the diseases themselves that we are now able to offer much more than symptomatic suggestions. Locke and Osgood summaries the treatment as follows:

1. The treatment of such conditions as primarily or secondarily affects the condition of the joints.

2. The special treatment demanded by the different types of disease. Under the first class is included the general treatment that can be applied to all cases correcting any disturbances of the general bodily health such as anemia, malnutrition, nervous debility, obesity, chronic constipation, etc. Infective foci must be eliminated. Deformities should be corrected and organic disease of the viscera consistently looked after. The diet should be nutritious and should include copious water drinking to favor the elimination of waste and toxic products. Hydrotherapy, artificial hyperemia, massage with active and passive motion are the measures that we can expect to be most efficient, and have displaced former drug methods.

Rest is absolutely necessary in all cases, but care must be used since too much rest induces muscular atrophy and adhesions in certain forms of joint diseases. Climatic influence is certainly to be considered an important measure, but unfortunately the average patient is unable to change his residence to suit his ills. Drugs are of use in relieving symptomatic demands. The salicylates are contraindicated, their continued use produces cardiac depression and gastro-intestinal irritation. Iron, arsenic and the iodides may prove of use as tonic alteratives, but until a specific is discovered there is no drug that is demanded or that offers us anything more than symptomatic relief.

ESOPHAGEAL CARCINOMA,*

WILLIAM P. LANG, M.D.,
NEW HAVEN, CONN.

The esophagus is rarely the seat of carcinoma, Walshe[1] found that of 8,298 deaths from malignant disease only 13 were due to cancer of the esophagus.

Here as elsewhere in the alimentary canal, we find histologically those tissues in which the disease is prone to occur. The structure is often subjected to sufficient irritation to serve as an exciting cause. Heredity and age seem to play about the same part here as in cancer of other organs. It is more frequently found in males than in females; thus Morell Mackenzie[2] collected one hundred cases and found it occurring seventy-one times in men. It usually makes its appearance after the fortieth year. Generally it is primary, but may be secondary to cancer of the tongue, pharynx, mediastinum, or stomach.

Carcinoma may involve any portion of the esophagus from its beginning to its termination. Post-mortem examinations, however, do not show that the disease has a predilection for any particular region, although Butlin[3] claims that the central portion of the canal is the least often affected.

Anatomically we find that the mucous membrane lining the esophagus is of the squamous variety, and

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consequently the form which cancer usually takes when it involves this structure is of the flat or surface squamous celled epithelioma. Of fifty-seven cases collected by Butlin[4] fifty-three were epitheliomatous, two were scirrhus, one was encephaloid, and one was colloid.

The disease usually begins in the deeper layers of the mucous membrane. It may originate as a benign papilloma, when, at a later period we find that the epithelial cells have broken through the membrana propia and proliferate in the surrounding tissues; or it may take its origin as a small deep-seated nodule. By some pathologists it is believed that a similar origin for the growth may be found here as in cancer of the stomach—namely in the scar of a healed ulcer, in which as a result of continued irritation, the malignant process may take place. As it grows it tends to encircle the esophagus for a length of one or more inches. It may remain as a flat infiltration with superficial ulceration, or it may project inwards in large fungous masses, greatly reducing the caliber of the tube.

Coincident with the growth of the carcinomatous tumor we find sooner or later the processes of destruction and contraction taking place. The surface at about the center of the growth soon ulcerates, either as a superficial necrosis or deeply as the separation of sloughs. The presence of the growth soon causes a development of fibrous tissue which takes place around and within the tumor; this fibrous tissue subsequently contracts and the lumen of the tube is diminished. Extension of the growth may take place by contiguity of tissue and thus we may have involvement with perforation of neighboring structures, as the lungs, bronchi, pleuras, pericardium, and large bloodvessels. Posteriorly we may have erosion of the vertebræ and involvement of the spinal cord. Metastases may be found in the liver, kidneys, spleen, small intestines, mesenteric glands, bones, and other organs and tissues. The post-mediastinal glands and the deep cervical glands are those usually involved. If the growth involves the lower portion of the tube there is usually a dilatation of that portion of the esophagus above the area of stenosis.

Carcinoma here as in other parts of the body presents its one marked symptom—the progressive emaciation. Sooner or later we have symptoms referable to the location of the growth which are caused by the increasing stenosis. Dysphagia becomes a prominent symptom; it gradually and steadily increases, from only a slight difficulty being experienced in swallowing solid and semi-solid foods until liquids alone can be taken, and finally even liquids are regurgitated. The regurgitated contents may contain in addition to the food swallowed, blood, mucous, and portions of the cancerous growth. Pain may be a prominent symptom, and if so it is usually of a paroxysmal character.

In some cases the patient can locate very accurately the seat of obstruction. It not infrequently happens that when the obstruction is at its height, a sudden and marked improvement takes place; this, however, is only temporary, and is due to the accidental removal of a portion of the growth, which renders the canal more permeable for a time. The breath becomes very offensive, due in some cases to the gastric disturbances, and in others to ulceration and sloughing at the seat of the disease. Dryness of the tongue and the fauces, with troublesome thirst are distressing symptoms. The bowels are usually constipated.

In some cases the symptoms of metastatic growths may overshadow those of the original tumor.

The duration of the disease is seldom over one and a half years. In the soft medullary variety the duration is much shorter.

Among the various complications which may occur are the following: Hemorrhage may result from ulceration into the aorta or its branches. Collapse of the lung from perforation of the pleural cavity with subsequent development of an empyema. If the air-vesicles are perforated, a pneumonic process and gangrene ensues. An involvement of the vertebræ will subsequently cause pressure on the cord and paraplegia result. Pressure on the recurrent laryngeal nerve will result in paralysis of the vocal cords.

The diagnosis of cancer of the esophagus is usually easy, in some cases, however, it is very difficult. The dysphagia is the prominent symptom and the one for which the patient seeks relief. It is essential then, that we find the cause for the obstruction, be it within or without the canal. An esophageal bougie in then passed gently down the esophagus until the obstruction is met. The distance from the bulbous extremity to the teeth is marked on the shank of the instrument and when withdrawn it is measured. Should the bougie be covered with blood and mucous, it is well to subject the material to a microscopical examination in order to determine the presence of epithelial cells suggestive of malignancy. If the cause be without the canal and the case is not an advanced one, gentle pressure for a few minutes will allow the bougie to be pushed into the stomach. Aneurysm of the aorta, pharyn-

geal tumor, tumor in the posterior mediastinum, malignant disease or abscess of the vertebræ are some of the causes which may produce obstructions from without. Among the intrinsic causes are strictures from traumatism, syphilis, chronic ulcer, chronic esophagitis, paralysis, and simple dilatation.

In the case of obstruction due to traumatism or syphilis, the previous history of the case in each instance will assist in the differentiation. If the stricture is due to single ulcer, there will usually be a history of previous hemorrhages occurring at a time too distant for the actual onset of a cancer. In the case of paralysis the dysphagia can be overcome by the passage of an esophageal bougie. In chronic esophagitis the progress of the disease will help us to differentiate it from cancer. An examination with the esophagoscope will prove a valuable adjunct in clearing up the diagnosis.

The treatment of cancer of the esophagus resolves itself in the conducting of such measures as will insure the prolongation of life and the relief of suffering.

In the early stage of the disease the treatment will consist in the selection of such articles of food which are free from irritation and of a highly nutritious value. The gentle passage of soft esophageal bougies at regular intervals will prove advantageous in preventing the early presence of stricture.

When the patient reaches that stage when only liquid food can be swallowed then the question of operative interference comes up for consideration.

The first operative measure to be thought of is the tube feeding. Morell Mackenzie[5] was in all probability the first to introduce the tube feeding; but we must credit Symonds[6] for the marked advances made in this form of treatment. The idea involved in the tube feeding was the gradual dilatation of the stricture by the insertion at stated intervals of soft rubber tubes of increasing caliber. Two kinds of tubes were used; the long tube extended from the nose through the esophagus and into the stomach, while the short tube only extended for a short distance on each side of the strictured area. To one end of the short tube was inserted a piece of silk thread which, after the insertion of the tube was tied about the ear of the patient, the other end was closed but near it and on one side was the opening for the food to pass through. The tube was inserted by means of an introducer through the strictured area and allowed to remain for about ten days when it was removed by pulling upon the silk thread; then a tube of larger caliber was inserted.

The danger in connection with the use of these tubes lies in the possibility of their becoming disconnected from the silk thread. When that occurred the attempt was made to push it into the stomach with the hope that it may pass through the gastro-intestinal tract which it rarely did. One of the objectionable features of the Symonds's tubes and of Gersuny's method of permanent tubage as well is the marked irritation caused by the pressure exerted from these tubes, which, if continued, results in ulceration of the mucous membrane. It is probably this objectionable feature that has done more to condemn this form of treatment with some surgeons who favor other operative procedures.

In those cases where the carcinoma lies sufficiently high two operative measures present themselves for consideration. Since the radical treatment of malignant diseases involving this structure by esophagectomy has not proven as successful as is attendant when such disease is found in other and more accessible structures, the palliation with external esophagostomy will be more often indicated.

When the disease is found to involve the middle or lower thirds of the esophagus, the operation of election is gastrostomy. The method as suggested by E. J. Senn giving the best results with the least danger of leakage.

In concluding I wish to give you the history of the case of carcinoma of the esophagus which I presented at a recent meeting.

Mr. B. L., age 67, was admitted to Grace Hospital on May 27th, of the current year, with the following history: Until October of last year he had always enjoyed good health. His present trouble commenced with attacks of severe pain in the posterior part of the chest, this pain was of a paroxysmal character and at times would shoot forwards to just beneath the sternum. The attacks of pain usually came on shortly after he began to eat and would last from one-half to two hours. He obtained treatment for the condition both here and elsewhere, but the results were not satisfactory. In February of the present year he noticed that in addition to the pain solids were swallowed with difficulty. As the dysphagia increased he sought treatment in the hospital with the result that he obtained some relief. From October to May of the current year he lost thirty-four pounds in weight.

After his admission to the hospital an attempt was made to pass the smallest size esophageal bougie, but it met with an obstruction at a distance of 14 inches from the incisor teeth; on gentle pressure, however, it was made to slip by the obstruction and reach the stomach. Upon withdrawing the

bougie it was found covered with mucous and blood, which was examined under the microscope to determine the presence of epithelial cells suggestive of malignancy. As the patient regurgitated all semi-solid and liquid food, an examination of gastric contents following a test breakfast was not made. Upon completing the examination a diagnosis of carcinoma of the lower third of the esophagus was made.

After a few weeks of treatment with bougies of increasing size he left the hospital feeling well satisfied, since he was able to eat semi-solid food. From time to time he returned to have the bougies passed, but only at such times as he found that he could not even swallow liquids.

When he returned for treatment last month we believed that he had reached the stage when a gastrostomy should be made, and he re-entered the hospital for this purpose a few days later.

As his physical condition was bad, owing to the deprivation of fluids, he was given high enemas of normal salt solution; twelve pints of which were retained in the forty-eight hours previous to operation. Two months ago to-day a gastrostomy was performed, using the method devised by E. J. Senn. It was an interesting fact to note that upon opening the peritoneal cavity, a marked atrophy of the stomach was found to exist and the organ itself was located deeply in the posterior part of the stomach fossa.

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AN IMPORTANT STEP IN WHITMAN'S REDUCTION OF FRACTURE OF THE NECK OF THE FEMUR.

In the abduction method of treatment, the anatomical structure of the joint has been utilized to reduce deformity with the same definiteness as in the manipulative reduction of dislocation of the hip. But although it has been often described, its purpose and the manner of its application are constantly misapprehended by those who have not seen it demonstrated. . . .

If the fracture is complete *the limb must be drawn downward until the shortening has been overcome* before abducting it. For if abduction is made before the shortening is reduced, the trochanter impinging on the ilium, would serve as a fulcrum to separate the fragments. Whereas, when properly applied, it will appose them, unless it is carried beyond the normal limit. This is, however, most unlikely, because of the resistance offered by the muscles and by the capsule.—ROYAL WHITMAN in the *N. Y. State Journal of Medicine.*

COLLES' FRACTURE.*

J. W. ANDREWS, M.D.,
MANKATO, MINN.

One of the most important fractures with which the surgeon, and indeed the general practitioner has to do, is Colles' fracture,—first, because of its frequency; second, because of the deformities which so often follow, and which are so conspicuous. These deformities are ever before the public, advertising the physician in a way that he does not wish.

No one can be a good surgeon without first becoming a good anatomist. One may as well try to repair an automobile without a knowledge of the mechanism of the machinery as to undertake surgery without a knowledge, at least, of the surgical anatomy of the part or parts of the body he essays to treat. Without this knowledge the machinist and the surgeon will be a dismal failure; the latter more than the former, because the first deals with dead matter, the second with vital tissue. The first essential then in diagnosing and treating Colles' fracture is a thorough knowledge of the surgical anatomy of the wrist. It is not necessary to know the anatomy in detail, *e.g.*, one can diagnose and treat Colles' fracture perfectly, without knowing the attachments of the extensor longus pollicis, although these minor details are desirable.

The physician must know that the radius articulates with the scaphoid and semilunar bones, and that the ulna does not, *per se,* enter into the wrist joint except through the intervention of the triangular fibro-cartilage. It is essential to know that the radio-ulnar articulation is formed by the head of the ulna fitting into the sigmoid cavity of the radius, and the bones are held in juxtaposition by small transverse ligaments, together with the triangular fibro-cartilage. This little cartilage is one of the most important structures in the wrist joint. It is attached by its base to the osseous border of the radius formed by the sigmoid cavity, and the articular surface of this bone, and by its apex to the base of the external surface of the styloid process of the ulna. The lower end of the radius is thick and widened by the large styloid process, and is composed of a mass of spongy tissue and a thin layer of cancellous tissue. The anterior lip of the radius projects prominently to the front. The posterior lip is on a plane with the posterior surface. The flexor and extensor tendons of the hand and digits pass over the wrist anteriorly and posteriorly respectively, but no muscles are inserted into any of

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the bony prominences about the wrist that materially influence the reposition of the parts concerned in Colles' fracture, or the deformity which may follow. The question of muscular contraction or tension does not enter into the fracture.

The prominent external landmarks are the styloid processes (radius and ulna), the head of the ulna, the anterior lip of the lower end of the radius, and the thenar and hypothenar eminences.

In the normal wrist the styloid process of the radius is on a somewhat lower plane than the corresponding process of the ulna. The base of the thenar eminence is lower (*i. e.*, nearer the hand) than the hypothenar.

The head of the ulna is prominent posteriorly while the anterior lip of the radius can easily be palpated anteriorly. I should like to take all the above enumerated anatomical points seriatim, and demonstrate the value of a knowledge of these both in the diagnosis and treatment of Colles' fracture, but the scope of this paper will not permit.

The cause of Colles' fracture, probably in 90 per cent. of the cases, is a forward fall striking forcibly upon the palm of the hand. The mechanism of the fracture of the lower end of the radius, in consequence, is exceedingly interesting. The anterior ligament is first made extremely taut. If the force of the fall is not yet spent either the ligament must give way, the carpal bones break, or the lower end of the radius fracture. The anterior ligament is attached to the anterior projecting lip of the radius above and to the anterior surface of the cuneiform below, principally, so that we have the principle of a lever applied with the power at the cuneiform; the fulcrum at the scaphoid and semilunar and the weight at the anterior lip of the radius. The most usual lesion, therefore, is a cross fracture of the lower end of the radius; this is Colles' fracture. In addition, to the cross breaking strain is a vertical force due to the impact of the hand upon the ground, to which and through the arm is transmitted the weight of the body. The effect of this vertical force is to carry backward and upward the lower fragment of the radius, and if this vertical force is not yet spent, the sharp posterior border of the upper fragment is impaled into the spongy lower fragment. Let it be remembered that the triangular fibro-cartilage is attached by its base to the lower margin of the sigmoid cavity of the radius, and by its apex to the base of the external surface of the styloid of the ulna. In consequence of the traumatism above described the cartilage is torn off from one or the other, or both of its attachments. The radio-ulnar ligaments (not necessarily the interosseus) are either strained or ruptured and the head of the ulna is forced to the front. Then we have a picture of the lower fragment of the radius in a posterior position impinging upon and pushing the extensor tendons and overlying tissues backward, and the head of the ulna and lower end of the upper fragment of the radius crowding the flexor tendons, and the tissues overlying them forward. These changed positions produce a characteristic deformity known as the "silver fork" deformity. The soft tissues about the wrist joint coincident with the bone lesions above described are lacerated, the ligaments are stretched or torn, sometimes the tendon sheaths are lacerated and blood is extravasated into the synovial sac, and thus we have a picture of a very serious injury.

Diagnosis.—In Colles' fracture the base of the thenar eminence is higher (that is, nearer the wrist) than normal, and the slope from this eminence is more abrupt. The head of the ulna which is usually so prominent posteriorly disappears from behind and appears in front. The styloid of the radius is on a plane as high as, and often higher than, that of the ulna. The wrist is broadened because of the rupture of the inferior radio-ulnar ligaments, and separation of the triangular fibro-cartilage from one or the other of its attachments. The lower end of the upper fragment projects forward causing a protuberance anteriorly; the lower fragment is thrust backward causing a bulging posteriorly. These abnormal positions and conditions are sufficient for a diagnosis, and except in a very fleshy arm can be determined by inspection supplemented by gentle palpation. Another form of Colles' fracture, the "reversed Colles," in which the lower fragment is dislocated forward I shall not describe in this essay. Suffice it to say this form of fracture is very rare. When the surgeon is called to attend a fracture, as a rule one of the first things he thinks of, and one of the first things he does is to determine whether or not crepitus exists, as though this one symptom overshadowed everything else. This is one of the most unreliable symptoms in Colles' fracture, for it is absent more times than it is present. The same is true of abnormal mobility. As a rule, therefore, anesthesia is not necessary for diagnostic purposes in Colles' fracture.

I cannot leave the subject of diagnosis without strongly advising the use of the *x*-ray as a supplementary means to a clean-cut, accurate diagnosis.

Treatment.—Of course, the first step toward successful treatment is complete reduction of the parts to their normal position. This cannot be done without an anesthetic. The writer believes that this

should always be given, and if the diagnosis is not clear it can be cleared up at this time. Rough unsystematized handling will still further injure the already injured parts, and is unsurgical and unscientific.

The books usually describe the manner of taking hold of the parts for the purpose of reduction; this is confusing to the tyro and useless for the adept. The surgeon must know his anatomy and determine accurately the character and extent of the injury, then restoration under an anesthetic will come easy without fixed rules. Upon the following, however, will hinge the success or failure of the treatment. The lower fragment of the radius is partially or wholly displaced, and this must be brought back to its normal position end-to-end with the upper fragment. Because of the rupture of the inferior radio-ulnar ligaments, the bones separate and the wrist "spreads." The bones must be brought back into juxtaposition so that the head of the ulna will rest in the sigmoid of the radius. The head of the ulna is displaced forward and loses its posterior prominence, and this must be placed backward in its normal position and there retained. Lack of attention to any one of these conditions will cause permanent deformity. To think that a Colles' fracture is set when the lower fragment of the radius is brought back into position is a mistake that has brought sorrow to many a surgeon after union takes place. The most frequent permanent deformity is the slumping forward of the ulna, and the next most frequent is the so-called "spreading" or widening of the wrist.

It sometimes happens that the force of the falling body transmitted to the wrist is so great that the lower fragment is pressed out of shape (it is largely spongy tissue) so that it is made wider from side to side, and broader from before backward, and this compression is not equal in all parts of the fragment. For this reason the articular surface is made to fall in an abnormal direction. The widening and broadening and the changed articular surface are deformities, and always will be permanent; they are irremediable.

I wish to call attention to one other point in reducing this fracture. It frequently happens that the cross break of the radius is incomplete posteriorly, *i. e.*, periosteum is left intact. If one tries to reduce the fracture by extension and forward pressure he will only lock the lower fragment against the upper without reducing it, and the stronger the extension the firmer will the locking be. It is clear to every intelligent physician that the remedy here is to increase the backward flexion while extension is being made.

Whatever may be the character or extent of a Colles' fracture, and no matter how poorly reduced, healing takes place very rapidly the bones will be united in three wekes. When the fracture is once well reduced there is very little tendency to recurrence and the parts are easily held in position by some simple dressing. Whatever form of dressing is selected the forearm should be in a semi-prone position, and placed in a cravat sling which should not extend below the head of the ulna. No dressing should include the fingers. Some surgeons are content with a simple firm bandage about the wrist after the parts are put well in position; others use a posterior splint only; others an anterior splint.

For several years past the writer has used both the anterior and posterior splints extending from a little below the elbow to the knuckles. These have been well padded with sheet wadding, firmly though not tightly pressed together, a pad placed against the lower fragment of the radius behind and against the head of the ulna in front and to the inner side; strips of adhesive plaster are used to hold the splints in position, and these are further secured by a roller bandage. My results have been good. I should be afraid to risk the simple bandage. Although the posterior split dressing would be in most cases satisfactory, my objection to it is that one cannot so well prevent anterior slumping of the head of the ulna. I do not use a plaster of Paris dressing for Colles' fracture at all.

After-Treatment.—Many good surgeons recommend early passive motion. I do not believe that passive motion does a great deal of good; I am sure it can do much harm. It keeps the joint irritated and inflamed, increases the amount of callus and causes the patient useless suffering. Early active motion, *i. e.*, as soon as good union has taken place will lead to a perfect functional result. Early massage, if gentle, is not only permissible but to be recommended.

FOREIGN BODIES IN THE NOSE AS A CAUSE OF HEADACHE.

Rhinoliths and foreign bodies cause headache either by pressure or by a continual irritation of the parts. A rhinolith may exist in the nose for many years without headache or other unpleasant symptoms, but a foreign body as a rule in a comparatively short time will make itself known either by a pressure headache or by setting up a purulent rhinitis which may extend into one or more of the sinuses and so cause the headache.—ARTHUR I. WEIL in the *New Orleans Medical and Surgical Journal.*

THE INDICATIONS FOR OBLITERATIVE IN CONTRADISTINCTION TO RECONSTRUCTIVE ENDO-ANEURISMORRHAPHY.*

W. J. FRICK, M.D.,
KANSAS CITY, MO.

A consideration of the surgery of aneurism and especially of the various procedures of Matas, who has done so much to stimulate interest and activity in this particular field, leads to a discussion of the advantages or merits which one method enjoys above another and, as deductions, to certain well-marked contraindications which a further report of cases and our own experience seem to corroborate. It is quite certain that those would be operations of choice, which in a plastic manner restored the blood stream, practically, to its former course, and thus reëstablished a normal peripheral blood supply without endangering either nourishment or function of distal parts.

Matas' procedure, which in theory and frequently in practice, accomplishes this end, is his operation of restorative or reconstructive endo-aneurisymorrhaphy. It goes without saying that the more important the artery, or the more central the situation of the aneurism, the greater is the desirability and necessity of a method to restore the blood stream to its integrity, as is attempted by the restorative or reconstructive operation. But, in the face of this ideal procedure and of a number of brilliant accomplishments in this line, further clinical experimentation shows that there are often grave obstacles to its success.

We find that the vast majority of contraindications to the ideal procedure reside in the morphology of the sac itself, and are not revealed until the operator is face to face with its interior, stripped of clots and fibrinous deposits. From a surgical viewpoint, the simplest form of aneurism is one of the saccular type, occupying a position, as it were, of a lateral outgrowth from the main arterial trunk, and within which sac the orifice of communication with the artery is small and which from its nature does not, except from pressure or inflammatory deposits, encroach upon the blood stream. Here a simple plastic suture of the orifice plus the closure, if any, of minor arterial openings within the sac and the obliteration of the aneurismal cavity by buried sutures or perhaps the infolding of skin flaps, or the use of gauze packs, etc., according to the methods of Matas, appeals to one most strongly.

CASE I.—The following case illustrates the type of aneurism just described, but the method of operating differs somewhat from the Matas restorative operation. This was a ruptured sacciform aneurism of the femoral artery, situated at about the junction of the upper and middle third of the vessel. A localized area over the surface of the tumor mass was ulcerated and bleeding when this patient entered the hospital. There were several hemostats attached to the substance of the mass to arrest hemorrhage.

Operation, October 11, 1905: Blunt dissection into the tumor showed it to be a sacciform aneurism with a very small opening into the main vessel. The sac, though slightly adherent to surrounding tissues, was freed and ligated flush with the main artery. This approximated the coats of the aneurism at its neck and obliterated the opening. The sac was snipped by scissors and the wound dressed. The post-operative history was uneventful, the patient leaving the hospital on the eleventh day, with no symptoms of his trouble.

Leaving now this simplest category of cases, which may unfortunately be but a small proportion of the whole number, our next phase in simplicity of intrasaccular conditions is one in which the main orifices of inlet and outlet are separated by a variable interval with perhaps the old stream bed still traceable connecting them. Here with a smooth, healthy serosa in this inter-orificial area, with pliable, comparatively healthy walls to enter into the formation of the new artery, with no collateral orifices requiring sutures to complicate the field; with all these conditions most favorable, reconstructive suture over a rubber tube or guide has, in a fair number of cases, shown itself quite feasible. Unfortunately, all these desirable factors may not be present; conformation may favor, but the wall may be stiff, brittle and not available for plastic work, or the serosa may be so defective that with the further insult of sutures and manipulations the operation would fail in its immediate design and become, in fact, an obliterative procedure by the formation of a thrombus at the operative site.

Not to discuss the various shapes and conditions within the sac which oppose the ideal procedure, further than these few suggestions indicate, we believe that in the vast majority of cases the radical obliterative endo-aneurismorrhaphy is the operation to be preferred for the following reasons:

1. The procedure is definite, thorough and radical.

2. No plastic work in diseased tissue is required, such work being notoriously uncertain.

*Read before the Western Surgical and Gynecological Association, December 29-30, 1908.

3. In a majority of cases the sac configuration and intrasaccular conditions will preclude plastic work.

4. In reported cases where apparently either method might have been employed equally well, the obliterative method has been more satisfactory, and shown greater freedom from untoward sequelæ, such as recurrence, hemorrhage, thrombosis, gangrene, etc.

5. An aneurism (pathologic) is a malignant degeneration in a vital structure. The diseased vessel can no longer be depended upon and deserves obliteration.

Our second case was that of a large popliteal aneurism of nine months' duration.

Operation, November 20, 1906. The operative field was made bloodless by an Esmarch bandage. A longitudinal incision extending beyond the tumor above and below the aneurism gave free access to the sac. Without further destroying the external relationship of the sac, the tumor was incised throughout its full length, blood clots and fibrin removed, and the interior cleansed and dried. The proximal and distal openings of the artery were found at the bottom of the sac, about two inches apart.

After a careful study of available tissue, a reconstruction of the artery was attempted, suturing with No. O iodized catgut over a No. 14 F. catheter as a guide, the cavity being obliterated by buried sutures. Upon removing the tourniquet, the vessel below the tumor could be distinctly felt and seen pulsating, showing that the artery was in fact reconstructed.

The subsequent history of this case was almost uneventful. The limb was restored in function. The man is certainly well and has resumed his work as drayman. There is no proof that the patency of the artery was permanent. We have never been able to detect a tibial pulse.

Our third case was also a popliteal aneurism. The patient was able to get about only with the help of crutch and cane. A large pulsating tumor occupied the right popliteal space. The leg was swollen and no pulse could be felt. In this case, as in the one just reported, the field of operation was made bloodless by the use of an Esmarch bandage at the upper part of thigh. A skin incision of sufficient length exposed both the upper and lower part of the aneurism; the sac was emptied of clots and fibrin. The interior of the sac was rough and corrugated and showed two arterial openings besides those of the parent artery. The walls were so friable and the endothelium between the openings of the parent artery so uninviting, that an attempt to reconstruct the artery was abandoned. All arterial orifices were closed by intrasaccular sutures and the sac obliterated by tiers of buried catgut sutures, according to Matas' method. The wound was closed with drainage, the drain being removed on the second day. This patient left the hospital on the tenth day, and was soon at work as a Pullman porter.

The technic of intra-aneurismal surgery resolves itself into several distinct essential steps:

1. Preliminary hemostasis. To accomplish this is more or less difficult, according to the situation of the aneurism. Esmarch's compression of the main artery above, and temporary, direct compression above and below are variously used. A bloodless field is almost a *sine qua non.*

2. Free opening of the aneurismal sac, to permit a careful survey of the interior, before deciding the plan of procedure.

3. Intrasaccular suture of orifices.

4. Obliteration of cavity by sutures.

5. Closure and drainage.

The after-treatment of these cases is usually simple, only one or two points being worthy of comment. The member or part operated upon is best immobilized by some suitable fixed dressing in a position of relaxation. This prevents tension on the vessel wall longitudinally, and also allows free play for the establishment of a collateral circulation.

Drainage shoud be discontinued early, as soon as its purpose is served.

SARCOMA OF THE BREAST.

Sarcoma constitutes from seven to nine per cent. of all tumors of the breast. It may occur at any time of life. They may remain small for years and suddenly increase in size, and when small it is impossible to differentiate them from fibro-adenoma, cysts, or carcinoma. When large the over-lying skin becomes tense, thinned, and reddened, and may ulcerate. The veins become much enlarged; the nipple, however, is rarely retracted, and the axillary glands much less frequently involved than in carcinoma. Soft sarcomata are more prone to return after operation.—S. E. MAYNARD in the *Vermont Medical Monthly.*

THE VALUE OF A REMNANT OF OVARIAN TISSUE.

Any operation which involves the removal of all of both ovaries during the period of sexual activity must not be viewed lightly from a moral, social or physical viewpoint.

The least portion of ovarian tissue is worth saving, even though all else of the genital organs be sacrificed. Repeatedly I have been surprised and gratified at the persistence of the menstrual function and the avoidance of the nerve storms, which mark the artificial change of life, when an apparently insignificant bit of ovarian tissue has been left. —PALMER FINDLEY in *The Medical Era.*

A PARAFFINED MESH FOR RETAINING SKIN GRAFTS.

RALPH ST. J. PERRY, M.D.,
FARMINGTON, MINN.

The publication by John Staige Davis, of Baltimore, of his method for retaining skin grafts *in situ* by means of a coarse netting impregnated with gutta-percha (*Annals of Surgery*, March, 1909), and its description in an editorial in the AMERICAN JOURNAL OF SURGERY, May, 1909, prompt me to report that for nearly fifteen years I have been using a somewhat similar method, which I believe to be much simpler of preparation and more accessible to the general practitioner.

Years ago, when using small "snipped" grafts, averaging in size about one-quarter inch in diameter, this problem presented of keeping the grafts *in situ* upon the granulating surface instead of having them come away adherent to the discarded dressings. After many trials (and tribulations), the desired end was attained by covering the grafted surface with a coarse netting or veiling, which had been sterilized and saturated with iodoform paraffine.

The original method of preparation was as follows: Silk netting with a mesh of not more than one-quarter inch, nor smaller than one-eighth inch, was boiled in plain water for half an hour to remove the gum, starch or other stiffening substance; then rinsed thoroughly in plain sterile water; next boiled in 1-5000 bichloride of mercury solution for half an hour; dried in the oven for about five minutes at a not too high temperature; and finally saturated with the paraffine solution and dried in the open air. During all this preparation the netting was spread upon and fastened to wire frames about 6 by 6 inches. The paraffine solution was made by dissolving sterilized or boiled paraffine in absolutely clean redistilled gasoline. This solution could be medicated by adding iodoform, aristol or any other suitable antiseptic soluble in gasoline.

Of late years I have substituted cyanide of mercury for the corrosive sublimate because the latter damaged the granulations and, incidentally, it attacked the wire frames and caused a deterioration in the quality of the finished nettings. Also I have used resublimed iodine in place of iodoform or other antiseptic for medicating the netting. The paraffine solution rapidly permeates the fibers of the netting and when the gasoline evaporates it leaves a soft, flexible, non-absorbent, non-adhering, antiseptic retention-dressing material, through which wound secretions readily pass, over which gauze, cotton or other absorbent dressings may be applied without fear of their pulling off the partially adherent grafts, and which is sufficiently open-meshed to permit of free inspection and cleansing of the wound surface.

Several pieces of the netting may be prepared at the same time and can be kept for future use by laying them away between sheets of sterile paper which are kept moist with a solution of cyanide of mercury. Immediately prior to being applied to the granulating surface the netting can be washed in sterile normal salt solution.

The materials used in preparing this form of retention dressing are such as can be obtained in any country village store and the method of preparation is so simple that the veriest tyro in technic can carry it out.

DUODENAL AND GASTRIC ULCERS.

Duodenal and gastric ulcers have so many points in common that there are really no characteristics by which they can be differentiated; and very often a differential diagnosis is immaterial, so long as an ulcer is recognized. Latent duodenal ulcer gives rise to little or no pain, has no typical symptoms and is generally unrecognized until suddenly there is a hemorrhage, which is liable to be severe, and blood is vomited from the stomach and passed from the bowels. This blood may be unchanged or greatly altered by the action of gastric and intestinal juices. That passed from the bowels may have a tar-like consistency. Severe hemorrhage occurs in about one-third of the cases. Before there is a hemorrhage, the appetite and stools are generally normal; dyspeptic symptoms are rare and there may be diarrhea, although constipation is the rule. Vomiting is rare and, barring the blood, is not characteristic. There may be an increased, a decreased or an absence of hydrochloric acid. In gastric ulcer pain is supposed to be relieved by vomiting; while in duodenal ulcer there is no relief from vomiting and it is claimed by some that in duodenal ulcer the pain comes on later, say four or six hours after eating, and that it is situated further to the right; but none of these points are by any means reliable. In pyloric ulcer there are pain, gas, acidity and the vomiting is more intense; while in duodenal ulcer the pain, gas, acidity and vomiting are not so well marked and the pain resembles more that of gall-stones. Icterus is an exaggerated symptom of duodenal ulcer, as it is rare and when present means some complication.—H. E. LOMAX, in *Albany Medical Annals.*

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WALTER M. BRICKNER, M.D., Editor

NEW YORK, JULY, 1909.

DIFFERENTIAL PRESSURE IN INTRATHORACIC SURGERY.

One of the most interesting discussions at the recent meeting of the American Medical Association was that devoted to some of the aspects of intrathoracic surgery. It was made notable by the reading of a paper by Prof. Friedrich, of Marburg, from whose clinic, both by his own contributions to technic and by the negative-pressure cabinet of his assistant, Sauerbruch, the greatest recent advances in this department have come.

Clinical and especially experimental data were adduced by other speakers. Meltzer called attention to the fact that respiration may be made to continue in an animal without respiratory movement: by inserting a small glass tube into the trachea as far as the bifurcation a double column is provided for, respectively, the inspired and expired air. He also stated that, physiologically, there is a difference in the effects of "negative"—and "positive-pressure" apparatus. Whether there is a choice between these two modes of differential pressure, and what are their relative advantages, are yet to be determined. In connection with the report of his experiments in pneumectomy Willy Meyer briefly referred to modifications he has made in the differential pressure apparatus. Instead of glass cabinets he uses balloons of rubber sheeting stretched on collapsible wire frames—the rubber outside the screen in the negative pressure, and inside in the positive pressure cabinets. By employing one cabinet within the other, he is able to combine both modes of differential pressure or to switch, at will, from one to the other. If it is ultimately learned that each mode has its indications, this combination will be most valuable. And until this problem is settled the combination of cabinets will help greatly towards its solution. For these reasons, and because of the lesser costliness and greater portability, Willy Meyer's cabinets would seem to be a modification of no little importance to the progress of intrathoracic surgery. —W. M. B.

VOLVULUS.

There are three important forms of intestinal obstruction: Mechanical obstruction, such as results from annular cancer of the bowel; the obstruction incidental to paralysis of the intestine, such as supervenes upon peritonitis, and mechanical obstruction plus strangulation in which the circulation of a part of the bowel is shut off, as occurs in strangulated hernia and in volvulus. These are three quite different conditions, each requiring different treatment, and all representing different pathologic changes.

Volvulus is a much more common condition than our literature would indicate. It is important because it first represents only mechanical obstruction, when it is the most easily curable of any of the forms of mechanical occlusion of the bowel. It may quickly become obstruction plus strangulation and gangrene, when for its cure resection of bowel becomes necessary. About seventy-five per cent. of the cases of volvulus involve the sigmoid flexure. Volvulus also occurs in cecum, small intestine, and in other parts of the colon.

The characteristic onset is sudden, and usually in a patient in good health. Pain is the first symptom; then come the other signs of obstruction. The pain is often severe, and the strong peristaltic effort can be seen through the abdominal wall. In few diseases does the patient's suffering plead more strongly for an injection of morphine; but in no disease can morphine do more harm. The surgeon is prone to go immediately at the trouble through the anterior abdominal incision as soon as the diagnosis is made; but it is noteworthy to observe that so experienced a surgeon as Waterhouse, of the Charing Cross Hospital, is a strong believer in the value of rectal enemata. (*British Medical Journal*, May 29, 1909.) He has seen many cases both of volvulus and of intussusception reduced by the use of repeated enemata, the patient being in the knee-chest posi-

tion. This position has succeeded when injections in the dorsal position have failed.

The unfortunate feature about volvulus of the sigmoid is that, if the pain is not severe, the gravity of the condition is often overlooked because of the absence of vomiting. All observers have noted that vomiting is apt to be a late manifestation in this condition. To defer operation because of the absence of this classic sign of intestinal obstruction is to deprive the patient of the chance of recovery.

If seen early the repeated enema should be tried. After the first twenty-four hours it is doubtful whether it is worth while. When this expedient does not succeed the bowel should be exposed. The object of the operation should be to save the patient's life. The twist should be relieved. It not seldom happens that this may be accomplished, in part or entirely, by enema, with a long tube, after the abdomen is open, when it failed beforehand. If the bowel is much distended it should be opened, its toxic contents washed out, and an artificial anus made or a tube left in the wound for later drainage and irrigation. When gangrene demands resection, it is better to end the operation with an artificial anus, to receive subsequent attention, than to perform a completed operation with anastamosis of the bowel at the cost of the patients' life.—J. P. W.

RENAL DECAPSULATION IN PUERPERAL ECLAMPSIA.

In the May number of the *Edinburgh Medical Journal* appear three articles dealing with the above theme. H. Oliphant Nicholson states that the three cardinal symptoms of eclampsia are contraction of all the arteries and arterioles of the body, enormously high blood pressure, and more or less suppression of urine. In spite of high blood tension the blood circulation in the kidneys is diminished, because of extreme vasocontraction particularly of the glomerular arterioles. The renal veins become congested chiefly from paralysis of their musculature and from the back-flow of the large veins of the abdomen. The logical treatment medically is drugs having a vasodilator action; surgically, decapsulation as suggested by Edebohls, or, as the capsule in cases hitherto reported was not always tense, merely single or multiple incisions into the lower pole of the kidney in order to afford local depletion.

Sir J. Halliday Croom reports a case of postpartum eclampsia in which the convulsions began eight hours after labor and recurred fourteen times in twelve hours. The patient was in extremis, all medical measures having failed, when renal decapsulation was finally performed and slow recovery supervened.

R. C. Buist records three cases, the first dealing with a patient who had absolute anuria and was not benefited by decapsulation. The second, who apparently was an epileptic, recovered, but hardly seems a convincing evidence of the efficacy of this method of treatment. The third had no symptoms of eclampsia, but rather those of toxemia due to extreme soprostasis. She also survived.

Croom's statistics show that of thirty-three cases operated upon for eclampsia, eighteen recovered. He concludes that the indication for decapsulation is not the total anuria but the clinical evidence that the unknown toxine has implicated the kidney more seriously than any other organ, and that the toxemic change has not yet advanced too far.

Experimental evidence on animals has never sustained Edebohl's claim that decapsulation of the kidney improved or cured chronic nephritis. In eclampsia, however, the kidneys are often notoriously healthy before and after the occurrence of this disease. Therefore, the contention that the renal symptoms are chiefly due to mechanical (circulatory) changes, and consequently can be relieved by purely mechanical means (surgical depletion), seems more credible in the latter instance.

The German literature of the last few years *(Gauss, Poland, Haim, Opitz,* etc.) contains numerous reports on this method, and in the United States decapsulation has also received some trial.

Before placing too much confidence in any one method of treatment it is well to bear in mind that our present conception of eclampsia is as yet vague, and embraces several clinical groups, such as "eclampsia without convulsions" (Schmorl), toxemias with convulsions, and the more common type of eclampsia. The etiology of these groups is even more vague than their clinical manifestations, mechanical causes (ureter compression) specific and non-specific toxines (syncytiotoxines, Veit), placental emboli (Schmorl), placental enzymes and thyroid insufficiency, etc., etc., having been assigned as causative factors. Let us also not forget that in performing decapsulation of the kidney we are combating a general disease by treating and perhaps in some instances relieving, only a single symptom, and that therefore all our efforts must not be limited to such a purely local measure. Finally, should our patient recover, let us remember, that seemingly hopeless cases have regained perfect health when treated by the old routine medical methods, notably the patients of Jardine and of Engelmann in whom more than 200 convulsions occurred and recovery supervened.—R. T. F.

Surgical Suggestions.

Vomiting in an insane person should always prompt an examination for hernia.—W.

No scalp wound is too small to receive the most scrupulous aseptic attentions.—W.

In searching for signs of fracture of the base of the skull, post-auricular edema should be looked for.—W.

An enlargement of the thyroid beginning after middle life should arouse the suspicion of malignant neoplasm.—W.

A foreign body in a bronchus diminishes the respiratory murmur over the affected side. If the body occludes the bronchus, the respiratory murmur will be absent.—W.

In fractures of the trachea an immediate tracheotomy is indicated, as emphysema occurs if the mucous membrane is punctured, and the operation is then rendered much more difficult. The mucous membrane is injured in most cases.—W.

Cancer of the posterior part of the tongue invades the lymphatics not only on the side upon which the disease is located, but also upon the opposite side, because of the peculiar anatomy of the lymphatics of this region.—W.

In a child presenting symptoms of tuberculous disease of the cervical spine, it should be remembered that other conditions, such as torticollis, inflamed lymph nodes, and sprain of the cervical ligaments, are capable of giving similar symptoms.

Neuralgia is differentiated from neuritis by the fact that in the latter pressure upon the nerve increases the pain. The pain of neuritis is more constant, and there are peripheral disturbances in the structures supplied by the affected nerve.

During and after the healing of fractures of the shaft of the humerus, the forearm and hand should be examined for wrist-drop and other evidences of musculo-spiral paralysis.

Book Reviews.

Surgery; Its Principles and Practice. In five volumes. Edited by W. W. KEEN, M.D., LL.D., HON. F. R. C. S., ENG. AND EDIN. Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. *Volume IV.* Large octavo; 1194 pages; 582 illustrations, 22 of them in colors. Philadelphia and London: W. B. SAUNDERS Co., 1909. Cloth, $7.00 net; half morocco, $8.00 net.

The contributions in this, the fourth volume of Keen's Surgery, are of uneven merit. The first article on *Hernia*, by W. B. Coley, affords an excellent survey of the subject and its value is decidedly enhanced by the fact that the author can call upon an exceedingly large personal material to enforce his statements. The only criticism that we can offer is the author's rather extreme bias against certain operations whose value has been amply attested by others. The next contribution, on *Diseases of the Rectum and Anus*, by Robert Abbe, is decidedly poor. It is written in a rambling style, the text is superficial and clinical aspects are inadequately discussed. The German spelling in the bibliography requires an almost complete revision. The article on *Examination of the Urine in Relation to Surgical Diseases*, by Edsall, is too discursive to be of much value to the surgeon.

Surgery of the Kidney, the Ureter and the Suprarenal Gland, by Ransohoff, is well written. In the discussion of the pathology of cystic kidney, however, the author shows that he is unacquainted with the most recent studies upon this subject. On page 240, the year 1889 should be 1899. The plates of kidney lesions included in this chapter are poor. The chapter on the *Surgery of the Bladder*, by Lewis, is excellent. Cabot's contribution on *Stone in the Bladder* is all that can be desired, although the advisability of devoting 35 pages, in a work of this character, to a not extraordinarily frequent malady, is questionable. The chapter on *Surgery of the Prostate*, by Hugh Young, is one of the best in this series. As we would expect, the advantages of perineal prostatectomy are set forth in rather strong terms. In *Surgery of the Penis and Urethra*, the author, Orville Harwitz, practically ignores the literature of the subject entirely, and the value of an otherwise very readable chapter is thus considerably diminished. The bibliography at the end of the chapter is of little value. Bevan's chapter on *Surgery of the Scrotum, Spermatic Cord and Seminal Vesicles* is fair. He describes his own operation for undescended testis and no other; chorioepithelioma of the testis—a not uncommon form of tumor of this organ—is not mentioned. The diseases of the seminal vesicles are insufficiently discussed. The chapter on *Surgery of the Intestines*, by Weller Van Hook and A. B. Kanavel, is very disappointing. It is practically nothing but a rehash of various articles and not even of those that are most representative. Much space is wasted by interminable descriptions of cases; the exposition is unsatisfactory and is lacking in system and in proportion. Much carelessness is shown in the spelling of proper names; as instances, Lidman, on page 695 should be Libman; on page 700 Gilson should be Gibson, and Halstead on page 725 should be Halsted. In the description of intestinal operations mechanical methods are entirely ignored. Finally, the English in which this chapter is written requires extensive correction. The next contribution is *Surgery of the Appendix*, by John B. Murphy, but only one disease of this organ, Appendicitis, is discussed. On that disease, however, this chapter is a masterly presentation. *Surgery of the Ear and Eye*, by Derch and de Schweinitz, are entirely satisfactory sections. The chapters on *Military Surgery*, by Gen. O'Reilly and on *Naval Surgery* by McCaw are welcome innovations in works of this character. Written by the heads of their respective military departments, these chapters fully come up to expectations. It appears to us that the last contribution in this book, on *The Influence of Race, Sex and Age in Surgical Affections*, by Rodman, might better have been devoted to a more important surgical topic. A subject of such breadth cannot be adequately discussed in the 21 pages devoted to it.

On the whole, this volume reveals the defects of the multiple authorship plan of writing books more than any of the preceding volumes. The personal note is excessively dominant and there are many repetitions. As instances, thrombosis of the mesentery is discussed in chapter 62 of this volume and chapter 10 of the first volume; hernia of the bladder in chapters 53 and 57 and gunshot wounds of the intestine in chapters 62 and 66. Finally there is lacking a proper proportion in the space devoted to the various topics. The illustrations maintain the high standards of the previous volumes and the publisher's part leaves nothing to be desired.

Experimental Researches on Specific Therapeutics. By PROF. PAUL EHRLICH, M.D., D.Sc. Oxon., Director of the Königliches Institut für Experimentelle Therapie, Frankfort. Duodecimo; 95 pages. New York: PAUL B. HOEBER, 1909. Price, $1.00.

Those who are not already familiar with the work on immunity and specific therapy of Ehrlich and his collaborators and followers, will do well to read this reproduction of the two Harben lectures of the Royal Institute of Public Health delivered by Ehrlich in 1907.

Lectures on the Use of Massage and Early Movements in Recent Fractures and Other Common Surgical Injuries, Sprains and Their Consequences, Rigidity of the Spine, and the Management of Stiff Joints Generally. By SIR WILLIAM H. BENNETT, K.C.V.O., F.R.C.S., Consulting Surgeon to St. George's Hospital, etc. *Fourth Edition.* Octavo; 134 pages; 23 illustrations London: LONGMANS, GREEN AND COMPANY, 1909.

Sir William Bennett's advocacy of massage in recent fractures was published in the *Lancet* in 1898, and his lectures expounding massage and early movement have been before the profession for the past decade. His paper on Sprains and Their Consequences appeared in the *British Medical Journal*, December 8, 1906, and was reviewed in an editorial in the AMERICAN JOURNAL OF SURGERY, February, 1907.

In this edition, a lecture on Sprains and one on Stiffness of the Spine replace the lecture on Derangements of the Knee-Joint which was in the third edition. The lecture on Massage and Early Movements in Fractures has undergone revision.

The adequate treatment of fractures, sprains and stiff joints is most important, and to those not already familiar with Bennett's practical contributions to these subjects we commend this reproduction of his lectures.

The Elements of Hygiene for Schools. Compiled by ISABEL MCISAAC, late Superintendent of the Illinois Training School for Nurses. Duodecimo; 172 pages; 32 illustrations. New York: The MACMILLAN Co., 1909. Price, 60 cents.

As an elementary text-book of hygiene, the author has provided an interesting work. She has aimed to present the every-day hygiene which all students should know. The economic basis of hygiene, the large problems of municipal sanitation, the hygiene of occupation come in for discussions which are suggestive for students though possibly not of practical application by them at the present time. It is to be regretted that a cumbersome diction should offset attempts at simplicity of expression. Weird grammatical construction often leads to ambiguity and even unintentional inaccuracies.

In the chapter on Bacteria, the drawings give false impressions as to the size and appearance of organisms as viewed through the microscope. To speak of a "cubic inch of bouillon" is scarcely allowable.

The chapter on Food, including effects of cooking, represents a careful compilation. To refer to the ratio of nitrogen to carbon in foods, however, without any previous or later reference to the chemistry of foods supplies an indigestible food for thought. The drawings illustrating the ratio of nutrients to non-nutrients in various foods lose most of their value because there is no indication as to whether the foods are represented as purchased or as ready to be eaten. To class horses among the carnivorous animals is certainly an error in proofreading.

The handling of the question of alcohol as a food is sane and balanced. The absence of a tirade against tobacco is also a welcome evidence of a scientific discussion.

The chapter on Causes and Dissemination of Disease is up to date, and includes reference to opsonins. It can hardly be stated that overwork and underfeeding are common to many occupations *per se*, granting both to be important factors, indirectly, in causing disease. To speak of an irritating gas from iodine may be permitted, but what gas arises from ammonia or chlorine? There is a glaring inaccuracy in writing of "the peculiar type of mosquito which serves as the carrier of malaria and yellow fever." Anopheles and stegomyia are not the same.

The chapters on Personal Hygiene, Household Hygiene, and School Hygiene are thorough, though brief and almost too elementary. The chapter on Hygiene of Occupation is properly introduced despite the apology in the preface. Furthermore, the subject is well handled, following Harrington's classification of dangerous occupations. The economic discussion of low wages, hours of employment for women and employment of child labor is well taken and in its proper place in a book on hygiene. The closing chapter on Disinfection and Quarantine is excellent, practical and valuable for students who are to drop the subject with this book. For this class of students the book was written. It will serve the author's purpose and serve it well, if it is given the use it deserves in the schools.

Tono-Bungay. A Novel. By H. G. WELLS. New York: DUFFIELD & COMPANY, 1909.

We give space in these columns to this latest novel by Mr. Wells because the story of the rise and fall of the patent medicine which gives it its title will prove interesting and diverting to physicians.

In Tono-Bungay the central figure relates his discreditable career—his boyhood impressions; his provincial experience as his uncle's apprentice in an apothecary's shop; his scientific studies, which he abandoned to contract an unhappy marriage and to exploit, with his uncle, a fraudulent nostrum; his vulgar, illicit love affair leading to his divorce; the development, by uncle and nephew, of a vast fictitious wealth by dishonest finance growing from the success of Tono-Bungay; the bursting of the bubble; the "hero's" effort to redeem the lost fortunes by an unsuccessful attempt to bring to England a boatload of radium-rich "quap" which he steals from a tropical island; his murder of an innocent native of the island; the escape from the law of uncle and nephew in an airship of the latter's design; the uncle's death; and another sexual encounter, more romantic than the others, but not more convincing.

Throughout the novel—and this is evidently its purpose—is the portrayal of the democratic disarrangement England's social scheme is undergoing—the representation of the fermenting England of to-day, the "England as a feudal scheme overtaken by fatty degeneration and stupendous accidents of hypertrophy." Here and there, too, is just a vague hint of the author's socialism.

Tono-Bungay is good reading for these summer days, and it suggests some things worth thinking about.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. *Volume VIII.* December, 1908. Edited by JOHN S. THACHER, M.D., and GEORGE WOOLSEY, M.D.

This volume contains 24 papers, some of which are highly interesting; it is ample testimony to the excellent work done in this hospital.

Progress in Surgery.

A Résumé of Recent Literature.

Ureteral Fistulae as Sequelae of Pelvic Operations. J. A. SAMPSON, Albany. *Surgery, Gynecology & Obstetrics,* May, 1909.

Sampson's study embraces the conditions of the ureter under normal and pathological aspects. The ureter has a sheath formed by adjacent connective tissue. As this is adherent to the peritoneum, above the broad ligament, the ureter remains attached to this membrane. The sheath also serves to protect the ureter from the invasion of cancer cells. The blood supply is derived from numerous sources and the entire ureter may be freed from kidney to bladder without causing necrosis; conversely rough handling of even a small portion of the duct may be followed by necrosis.

The ureter has been injured in almost every conceivable pelvic operation. It is in greatest danger when the parametrium is affected by cancer, infiltrated with exudates or where tumors are adherent to the peritoneum over its site or situated retroperitoneally. The most common site for the injury is at the crossing of the uterine artery. In dogs the author has cut the ureter across and allowed the urine to drain into the peritoneal cavity. The dogs recovered, as the ureter became occluded, hydronephrosis and hydroureter resulting.

Ureteral fistulæ may be divided into total and partial. In the former all urine escapes by the fistula and the danger of ascending renal infection is much greater. Cystoscopy, especially chromocystoscopy, is of aid in making an exact diagnosis. The ureteral catheter will not pass in cases of total fistula, the ureteral orifice appearing "silent" when observed. The condition of the kidney must be determined by palpation. Partial fistulæ usually heal spontaneously, total heal only through complete stenosis of the duct with destruction of the kidney.

When a fistula occurs the proper treatment is to wait 3-4 weeks until the patient's condition has improved. Then an accurate diagnosis should be made. Partial fistulæ usually heal spontaneously; if not, they should be treated like total fistulæ. The operations are, vesical implantation, which is the ideal, but cannot be resorted to where the kidney has been badly infected or partly destroyed; nephrectomy where implantation is not feasible either because of the site of the injury or infection of the kidney, and finally maintenance of the fistula. For implantation the transperitoneal route is to be preferred. The bladder should be attached to the ureter by 3-4 interrupted sutures and tension avoided by anchoring the bladder. Drainage is required.

To avoid ureteral injuries a knowledge of the anatomy is essential. Special care must be exercised in the conditions referred to above. A lateral ligature on the ureter may be removed within 48 hours and no fistula result; a clamp may cause necrosis even if applied but a few minutes. Longitudinal wounds heal, but transverse wounds cause a fistula. If after injury, it is impossible to implant or to anastomose, Sampson advises implantation of the ureteral stump on the skin surface and nephrectomy at a later date, in preference to ligation and burying of the stump which always entails the possibility of renal infection.

Ureteral Calculi: With a Consideration of the Operative Technic Below the Pelvic Brim. JOHN F. ERDMANN, New York. *New York Medical Journal,* June 12, 1909.

For the removal of ureter calculi below the pelvic brim Erdmann recommends a combined transperitoneal and retroperitoneal operation: This operation is done through an incision like that of Kammerer or Deaver for appendicitis, the peritoneum being incised sufficiently to admit one or two fingers to palpate the ureter. The ureter is located, and rapidly followed in its course until the object of the search is found. The outer flap of the peritoneum is then rapidly dissected away from its contiguous structures, and in a small enough well to expose the stone, which is held or raised by the intraperitoneal finger, the ureter is incised longitudinally over the stone just enough to allow of the expulsion of the calculus. Ordinarily, unless one finds a very large calculus, no sutures are required in the closure of the ureteral incision. A wick drain is placed down to the ureteral trauma, the peritoneum closed, and the remainder of the abdominal wound is closed to the emergence of the drain.

If when operating by the combined transperitoneal and retroperitoneal method one finds the stone impacted in the bladder wall, one may cut the bladder wall just above the ureteral entrance in the retroperitoneal dissection, and then cut through the mucous membrane of the bladder and the mural portion of the ureter, extract the stone, and sew up the bladder injury, draining posteriorly, and by the urethra with a permanent catheter for a few days, thus obviating the making of two distinct wounds of abdominal entry.

The Present Methods of Treating Gonorrhea in France (*Der gegenwärtige Stand der Gonorrhœtherapie in Frankreich*). K. F. HOFFMANN, Paris. *Muenchener Medizinische Wochenschrift,* May 11, 1909.

The author outlines the methods most in vogue. Small injections in the patient's control are not employed. Fournier's treatment by means of bicarbonate, and later the oils of copaiba and cubeb, is used by but few. On the whole Janet's irrigations are almost universally practised. The solution of potassium permanganate produces a vigorous serous exudation from the mucosa and also is strongly germicidal. When the inflammation is hyperacute hydrargyrum oxycyanatum 1 : 4,000, proves less irritating than the permanganate. If seen early—within six days after infection—abortive treatment is largely practised by injecting several c.cm. of 1-2 per cent. silver nitrate into the anterior urethra. After a few hours an anterior irrigation of 1-2,000 permanganate is given, to be repeated the next day. Thereafter twice daily complete irrigations into the bladder are given, the first one being preceded by cocainization. Most gonorrheas heal within 2-3 weeks. Where strong mixed infections are encountered irrigations with sublimate 1 : 20,000 are practised. Complicating inflammations of the prostate, vesicles or testicles are rare. Their treatment is that generally accepted, but does not require cessation of irrigation.

The site of chronic gonorrheas is determined by filling the bladder and then in turn massaging the bulb, vesicles and prostate, with urination between each of these acts to examine the expressed secretion. The pendulous urethra is palpated after introducing a No. 25 rubber sound. Chronic gonorrhea is treated by systematic expression and irrigations.

Glass Drainage Tubes in Prostatic Surgery. FOLLEN CABOT. *The Post-Graduate,* March, 1909.

The tube is a double-current glass tube, of about 35 French scale, bent at a right angle. The bladder end is about four inches long and has a large eye near the end. Running up from the eye on the outside is a small glass tube made as a part of the large one. This follows the large tube straight up and does not curve. It projects an inch or a trifle more above the right angle turn. The outer part of the larger tube is 2½ inches long, and points toward the patient's pubic region. This double-flow tube may be held in place by adhesive plaster or a bandage with a hole cut for entrance of the small tube.

On each outlet we place rubber tubing, and if desirable may have a constant flow of solution in at the small tube, out at the large one. The flow can be closely watched and the tube is always clean and held in place. The distance the drainage tube projects into the bladder may be increased or reduced by a padding of gauze under the external arm of the tube.

Blastomycosis. GEORGE W. SPENCER. *Cleveland Medical and Surgical Reporter,* April, 1909.

The initial lesion is a split-pea sized nodule which after a time becomes pustular and breaks down into an ulcer. This may extend in several directions. In nearly all cases there is a papillary growth, sometimes fungating. There is often a discharge of an offensive mucoid material which crusts over the lesion. The blastomycetes can be found in this purulent discharge by the addition of a little liquor potassi, as doubly contained, refracting, budding bodies. The general aspect is that of a scrofulo-derma with papillary growth. The lesion is usually multiple as the patient inoculates himself. The case reported is a girl of two and one-half years with good faimily history and who lived in healthy surroundings. The lesion first appeared on the back of the neck as a small nodule which ulcerated and increased in size. Several nodules appeared upon the legs which, after ulcerating, developed a fungus-like growth which had an offensive exudate. The growth was well-defined and of cauliflower appearance. Healing resulted from the application of salicylic paste.

Blastomycosis of the Skin in the Philippines. CAPT. JAMES M. PHALEN and LIEUT. HENRY J. NICHOLS. *The Military Surgeon,* April, 1909.

Blastomycotic infection of the skin was first described in 1894 by Gilchrist and generalized blastomycosis by Busse in the same year. It is a common parasitic affection among both natives and whites in the Philippines. The disease is caused probably by round, double contoured bodies lying in and between the epithelial cells. There are three distinct forms. The mild cases show lesions which are slightly elevated above the surrounding skin, are irregular in outline, and when freed from scales presents a smooth, reddish surface. The lesions itch considerably. The course is toward a progressive extension of the patches with marked induration of the affected skin. The tendency to appear in unusual locations, and the frequency of symmetrical distribution are the features which distinguish it clinically from ring-worm, with which it has many points in common. It has been observed to occur on the back of the hands, the forearm, shoulder, face, front of the legs and the toes. Most of these cases are of many months' or even of years' standing. The mildest yield to strong local antiseptics, others only to potassium iodid internally.

The second type is the one most frequently encountered. In these cases the lesions are in quite large patches, sharply circumscribed and considerably elevated above the surrounding healthy skin. They are frequently observed to have a border elevated above the rest of the patch which is beset with miliary abscesses covered with crusts. The remainder of the area has a red, smooth surface covered with scales. These cases have long histories and have been variously diagnosed as syphilis, leprosy, tuberculosis, etc. The third class show far more extensive lesions and resemble closely the disease as described in the United States.

Profound Toxemia and Development of Metastases After X-Ray Treatment of a Skin Sarcoma (*Schwere Toxämie und Metatastenbildung nach Röntgenbehandlung eines Hautsarkoms*). H. KANITZ, Kolozsvár. *Medizinische Klinik,* April 4, 1909.

The patient came under observation with an apple-sized sessile tumor over the left scapula that had been growing for over two years without producing many general symptoms. On two succeeding days moderately-timed Roentgen-ray exposures were made, the skin surrounding the tumor being carefully protected. A few days after, swelling of the tumor with erythema of the overlying skin developed, and at the same time high fever, malaise and weakness. The erythema rapidly spread entirely around the thorax, and the tumor began to degenerate and slough; profound prostration and high fever continued. After two weeks, the temperature dropped by lysis, the erythema had disappeared, and a large portion of the tumor had sloughed away. One week after defervescence small nodules made their appearance in the skin about the tumor; simultaneously the axillary glands on both sides enlarged. Eight days after these developments several pea-sized nodules appeared in the skin of the back and over the shoulders, and the cervical glands became palpable. These cutaneous metastases grew rapidly larger, signs of pulmonary metastases appeared, and the patient died six months after the two *x*-ray treatments.

Syphilis of the Stomach. ARTHUR CURTIS, Chicago. *Journal of the American Medical Association,* April 10, 1909.

Curtis gives an elaborate report of a case of gastric syphilis which is notable on account of the rarity with which it is diagnosed and the fact that serious complications amenable to treatment have arisen in 2 of the 16 cases which have been reported. One is the case of Frankel in which death was due to extensive ulceration and peritonitis, and the other that of Flexner, in which death occurred from perforated syphilitic ulcer. He also discusses the diagnosis. The synopsis of cases in the literature shows 4 important diagnostic factors: (1) The seat of primary involvement is, as a rule, the submucosa, the gummatous tissue invading other coats secondarily; (2) miliary gummata, sometimes with giant cells of the Langhans type; (3) *Spirochæta pallida.* These are not to be depended on according to the views of Koch and Schmorl; (4) peculiar vascular changes of high grade, resulting in partial occlusion or partial obliteration of vessels. The patient was in the surgical service of Dr. Braun at the Krankenhaus Friedrichshain, Berlin. A gastrectomy was performed and a histologic examination made. The diagnosis had to exclude simple gastric ulcer and tuberculous ulcer. The former did not account for plate-like noncicatricial thickening of the stomach wall of extensive vascular proliferation with high grade vascular occlusion. Tuberculosis was more difficult to exclude, but in addition to the epithelioid cells three factors opposed tuberculosis: First, there was no caseation; second, there was no sharp demarcation from surrounding tissues; third, there was present in each nodule a liberal number of small blood-vessels. Accessory factors in the diagnosis were the negative tuberculin tests, lack of tubercles on the serosa and absence of tubercle bacilli. Syphilis, therefore, had to be accepted as the diagnosis. Curtis emphasizes the value in this case of utilizing every available resource in diagnosis of stomach diseases. Syphilis is probably a more frequent cause of gastric tumor than is supposed, and, since the therapeutic mercurial test is so easily applied, it is at least worthy of consideration in certain selected cases. The patient made an uneventful recovery after the operation.

Bone Transference. Report of a Case of Operation After the Method of Huntington. ERNEST A. CODMAN, Boston. *Annals of Surgery,* June, 1909.

The treatment of osteomyelitis of the long bones has recently been modified by the adoption of subperiosteal resection. Nichols has shown that in chronic osteomyelitis much time may be saved to the patient by subperiosteal resection of all the diseased shaft, trusting to periosteal regeneration. Sometimes, however, this regeneration fails to take place, as in Codman's case, and then the patient is, of course, worse off than after the older and more conservative operation.

In the case reported a man, 32, had chronic traumatic osteomyelitis of the tibia, with discharging sinus for 19 years. In 1904 most of the shaft of the bone was removed subperiosteally by J. C. Warren. The sinus persisted and no bone generation took place. A prostesis was required. About a year later Codman performed the operation recommended by T. W. Huntington—transference of the fibula to replace the tibia. Only the upper end of the fibula was divided, and the bone was forced into the upper stump of the tibia. The sinus at the lower end of the leg was closed, and finally healed, by plastic operation.

The fibula has satisfactorily filled its vicarious function and, aside from a slight limp, the patient walks normall·

and without artificial support. X-ray pictures at various intervals in the three years since operation show the striking hypertrophy the transplanted fibula has undergone.

Ambulatory Treatment of Fractures of the Thigh; a New Traction Apparatus for Applying Spica Casts and Various Orthopedic Manipulations. CHESTER M. ECHOLS. *The Medical Herald,* March, 1909.

For the proper application of a plaster cast in the treatment of fractures of the thigh, the following conditions are necessary:

1. The patient under anesthesia must be supported in a horizontal position several inches above the table so as to permit the winding of the plaster bandage about the patient's thigh and pelvis without obstruction.

2. There must be sufficient traction on the affected limb to overcome all shortening. The traction should be uniform and continuous and not permit any wobbling or rotation of the limb during the application and hardening of the cast.

3. There must be counter traction against the perineum, axillæ, or elsewhere equal to the traction on the leg.

4. The supports which hold the patient suspended several inches above the table must be of such a character as not to interfere with the winding of the bandages. Thus, if the patient's pelvis is supported by a box or an inverted basin, this support would form an obstruction to the winding of the plaster.

The traction apparatus devised by the author is light and durable and capable of making a traction of 500 pounds with the lower limbs in any desired position. The apparatus is in the form of a drawing compass with a sacral rest and two vertical foot posts. The thin metal sacral plate is adjustable to any height. On this the patient rests so that no obstruction is offered to the winding of a snugly fitting cast. The leg bars allow an abduction of 180° and can be securely held at any point by a set screw. Sliding and telescoping crutches are attached to the leg bars. To the sole plates are attached double pulleys over which run a combination tackle block and clamping device, so that when the operator stops pulling, the clamp pinches the cord automatically.

The apparatus is not only useful in fractures of the femur, but is of value in applying casts in congenital dislocation of the hips, for body cases in Pott's disease and in osteotomy of the femur or wiring or nailing fractured parts where considerable traction is needed.

A Note on the Treatment of Dislocation of the Peroneal Tendons. E. A. TRACY, Boston. *Interstate Medical Journal,* March, 1909.

In this injury the common sheath of the peroneal tendons and the external annular ligament are torn across. It is necessary therefore (in recent cases) to keep the foot immobilized for a period of four weeks in the position at right angles to the leg, neither inverted or everted, as this position relaxes the calcaneo-fibular ligament. Very frequently the lesion passes unrecognized and a condition of chronic displacement with resulting disability ensues. For this reason, it is important to examine carefully all sprains of the outer ankle for dislocated or dislocatable tendons. For chronic displacement of the tendons Tracy recommends the Kraske or Kramer operation. This consists in cutting a flap of periosteum on the lower portion of the fibula, splitting off of the fibula (if desired) a thin layer of bone adherent to the flaps of the periosteum, and turning and binding down this flap with sutures, to the common sheath and tissues back of the tendons. The operation of deepening of the peroneal groove, which has been advised by some surgeons, the author regards as useless.

Habitual or Recurrent Anterior Dislocation of the Shoulder. II. Treatment. H. T. THOMAS, Philadelphia. *American Journal of the Medical Sciences,* March, 1909.

The only successful method of treating this disorder, in the author's opinion, is by open operation. Braces, while diminishing the number of recurrences, do so only at the expense of much impairment of function and consequent atrophy of the muscles. The operation is practically free from danger, inasmuch as no fatal issue has been recorded in the 34 reported operations. In only one instance was a recurrence noted after operation and this occurred in an epileptic. The author believes that the best access is obtained by an axillary incision and division of the subscapularis muscle. The joint should be opened in every case in order to note and remedy any intra-articular complications. The rent in the capsule, if found, should be sutured. Otherwise the enlarged capsule is shortened, either by reefing, by excision of a piece, or by overlapping an incision made into the capsule. The author reports one case in which a tear in the anterior and inferior aspect of the capsule was found and sutured, and in which the ultimate functional result was perfect.

Sinus Thrombosis of Otitic Origin and Its Relation to Streptococcemia. EMIL GRUENING. *New York Medical Journal,* June 5, 1909.

Recent studies on the bacteriology of acute affections of the middle ear show that they are due in more than 50 per cent. of the cases to the presence of the streptococcus pyogenes and is about 15 per cent. to the streptococcus mucosus. In subsequent sinus thrombosis, in many cases there is a systemic infection due to the primary invading organism. The blood cultures taken in ten cases were positive in seven. Of the ten cases (all having jugular ligations) eight recovered. Two illustrative cases are reported.

That a positive blood culture can be advantageously used as important evidence of the presence of a lateral sinus thrombus has been repeatedly demonstrated at Mt. Sinai Hospital. Patients who, after a thorough mastoid operation, did not do well, and whose temperature remained high though the accessible part of the sinus appeared healthy, improved immediately upon ligation of the jugular, which was thought advisable as the result of a positive blood culture.

In two cases admitted to the medical wards with high fever, *systemic infection,* and no previous history as to ear trouble, Libman arrived at the diagnosis of sinus thrombosis by the exclusion of other foci in the presence of a positive blood culture. In both these cases the lateral sinus was found thrombosed, though with the exception of old perforations of the drum, there were no external evidences of ear disease. The two patients recovered after evacuation of thrombi from the lateral sinus, one with and one without ligation of the jugular.

The Exciting Cause of Trachoma (*Die Erreger des Trachoms*). PROF. GREEFF, Berlin. *Deutsche Medizinische Wochenschrift,* March 25, 1909.

Greeff believes that he has finally discovered the long-sought-for parasite of trachoma. It is a round or oval-shaped coccus, occurring in clumps, and is smaller than any coccus thus far known. It stains violet or reddish with Grenisa stain, weakly with the aniline dyes, and not at all with the Gram stain. The cocci are present within the epithelial cells and in the stringy mucus. The clumps are frequently surrounded by a halo. These bacteria have not been found in any malady but trachoma. In order to find the germ, a little of the superficial conjunctival epithelium is scraped off and spread upon a cover glass. It is necessary to obtain a fresh untreated case of trachoma, for as soon as treatment has begun, the germs show a tendency to disappear. After fixing the preparation in absolute alcohol for 20-30 minutes, a stain of the following composition is applied for nine hours: 12 parts of Gremsa-eosin solution, three parts of Azure I, and three parts of Azure II. While no cultural or experimental observations have been carried out by the author, Greeff is convinced that the germ he describes is the true cause of trachoma.

The Coexistence of the Symptoms of Appendicitis and Right Kidney and Ureteral Irritation. LE ROY YOUNG. *The Journal of the Arkansas Medical Society*, May 15, 1909.

Three cases are reported where the patients were found at operation to be suffering from a diseased condition of the appendix. All of them had significant symptoms which complicated the diagnosis as there was a suspicion that either the right kidney or ureter was involved. In the first case, no adhesions being present, the author explains the condition by claiming that it was probably the result of disturbance transmitted through the nerve supply to the ureter which nerves are intimately connected with the superior mesenteric plexus which sends branches to the appendix and adjacent parts of the intestinal tract. In the last two cases it seems fair to conclude that the ureteral irritation was due to an inflammatory condition originating from the diseased appendix and carried forward through contiguity of tissue. When we take into consideration the relations of the organs in the right lower quadrant of the abdomen, it will not be difficult to understand how an appendicitis may subsequently involve the right ureter. This is especially true in those cases in which the appendix occupies the retrocecal space, resting upon the peritoneum over the psoas muscle. The ureter lies on this muscle behind the peritoneum and to the inner side of the cecum. In an appendicitis occupying the retrocecal space, inflammatory adhesions may take place over the muscle, and the peritoneum may be perforated at this point. Then it is easy to understand how the inflammatory process might involve the ureter, and, if sufficiently virulent, even perforate it. After this has occurred it is a reasonable conclusion that the kidney itself might be involved by an ascending infection. If suppuration does not supervene, the involvement of the ureter in the inflammatory process would cause pain radiating in a manner similar to the radiation of pain in the passage of a renal calculus, or irritation from other like causes.

Relation of Anomalous Renal Bloodvessels to Hydronephrosis. W. J. MAYO, W. F. BRAASCH, and W. C. MACCARTY, Rochester, Minn., *Journal American Medical Association*, May 1, 1909.

Mayo, Braasch and MacCarty call attention to the occurrence of anomalous renal bloodvessels and their relation to hydronephrosis. In twenty of the twenty-seven cases here reported, such vessels were present and the obstruction in each instance was at a point where they crossed the ureteropelvic juncture. The vessels passed to the lower pole of the kidneys a little to one side of the midline and varied from the size of a knitting needle to that of the radial. In all but two, the arteries came from the renal, sometimes passing in front and sometimes behind the ureter, but in either position the pressure of the artery seemed capable of developing the kink. The diagnostic data are: (1) Appearance of symptoms in the young adult; (2) intermittent attacks of abdominal pain referred to the kidney zone and occurring with more or less regularity during a number of years; (3) cystic tumor palpable in about a third of the cases; (4) presence of small amounts of pus in the urine; (5) usual absence of hemorrhagic urine, high temperature and bladder irritability; (6) typical cystoscopic finding, such as an occasional weak spurt of urine, slight obstruction of the catheter near the uteropelvic juncture, about 50 cm. of the catheter inserted into the ureter and pelvis, rapid drainage of pale urine with a variable amount of pus, and at least 40 c.c. injected without return flow before producing renal colic.

Cecostomy and Continuous Coloclysis in General and Other Peritonitis. C. A. L. REED, Cincinnati, *Journal of the American Medical Association*, May 22, 1909.

Reed describes a method of treatment he has been using for some time in certain cases of peritonitis and some other conditions, as follows: Recognizing the general peritonitis as always a result of infection, he places the patient in the Trendelenburg position and operates in the usual way to find, and if possible to remove the source of infection. Whatever may be the details of that operation, he brings up the cecum and fixes it in an incision directly over its situs, then opens the loop thus anchored and cuts the opening; he then inserts a soft rubber catheter and fixes it by sutures to the abdominal wall. He puts a self-retaining effluent tube into the rectum. Through the cecal tube he then treats the colon as the conditions may require. Under this last heading he first mentions the treatment of general peritonitis *in extremis*, that is with a subnormal temperature, uncountable pulse, and extreme distention. The first thing, of course, is to lessen the distention. Then immediately after the operation, or as soon as possible, he begins continuous irrigation of the colon with normal salt solution at 110° F. About three quarts are retained before the effluent current is established through the rectal tube. This internal application of heat directly to the solar plexus and by the absorption of water incidentally by the colon a reaction is generally secured with remarkable promptness. As soon as this occurs the free flow from the irrigator is stopped and the drop by drop clysis is substituted and continued for the next twenty-four hours or more. If the stomach is rebellious the cecal tube is used for feeding. Other uses of this treatment are in acute gastric ulcer when it is desirable to keep the stomach at rest for a while before operating, after gastroenterostomy, cases of malignant disease of the stomach or of the upper segment of the intestinal tract where operation is not practicable. He has already reported elsewhere on its utility in certain cases of intraintestinal disease requiring direct medication. The treatment is simple and safe and its restorative action is beyond question. A complete control over the colon facilitates the elimination of toxins. In conclusion he urges that cecostomy be adopted rather than appendicostomy. As compared with the presenting part of the cecum the cecoappendiceal juncture is an inch farther from the abdominal wall and there is the possibility of dangerous tension. The distensive pressure of a tube inserted and kept in the narrow appendix causes it to perish during the first few days after operating and thus an appendicostomy always eventually becomes a cecostomy. It is better therefore to make it a cecostomy at once.

A New Method of Recognizing Ulcers of the Upper Digestive Tract and Localizing Them. M. EINHORN, New York. *Medical Record*, April 3, 1909.

The method consists in the swallowing of the author's "duodenal bucket," attached to a long silk thread. The bucket is swallowed in the evening and is removed the next morning before breakfast. If an ulcer is present a brown or dirty black discoloration is found on the string and by measuring the distance of the discoloration from the teeth the site of the ulcer, according to the author, can be approximately determined. This method is not of value in ulcers of the fundus or of the greater curvature. For the localization of these ulcers, the author has devised a bag covered with gauze, which is introduced into the stomach in the collapsed condition, and is then inflated. At the end of half an hour, the bag is allowed to collapse and is withdrawn. If ulcers are present, brownish areas will be noted on the gauze corresponding to the site of the ulcer. This latter method, however, is only applicable to patients who are accustomed to the use of the stomach tube.

The Intra-Abdominal Injection of Oxygen as Studied in Animals. Report of Cases in the Human Subject. H. D. MEEKER, New York. *New York Medical Journal*, April 10, 1909.

The result of the author's animal experiments showed that: 1. Oxygen is completely absorbed from the abdominal cavity in less than 72 hours. 2. The injection acts as a slight respiratory and cardiac stimulant. 3. The blood pressure is not affected when the pressure of the gas is moderate. 4. The recovery from the anesthetic is hastened considerably. 5. The injection tends to prevent the formation of adhesions. 6. Peristalsis is stimulated. 7. Oxygen is not a peritoneal irritant. The author reports six cases in which the injection of oxygen was tried on

the human subject. In four patients in whom the injection was made for operative collapse, the effect was strikingly beneficial. In two patients the injection was done for tubercular peritonitis.

Reports of 300 Cases Treated with a Culture of Lactic Acid Bacteria. C. E. NORTH, New York. *Medical Record,* March 27, 1909.

Basing his observations on previously conducted experiments which showed an antagonism between lactic acid and bacteria and some of the putrefactive and pathogenic organisms, North has applied cultures of the bacillus bulgaris of Metschnikoff to various conditions in which such pathogenic organisms play an important or the main rôle. It has been used in atrophic rhinitis, acute rhinitis, otitis media, ethmoiditis-antral disease, tuberculous sinuses, cystitis, diarrhea, leucorrhea, suppurating wounds, gonorrheal ophthalmia and conjunctivitis. While an improvement was noted in nearly all of these maladies, the best results were obtained in atrophic and acute rhinitis, ethmoiditis, gonorrheal ophthalmia and conjunctivitis. (In the gonorrheal ophthalmia cases, silver preparations were also used.) The few surgical cases were not appreciably benefited. The culture is used directly on the inflammatory area as either a wash or spray. It is entirely harmless. The author believes that these cultures will find a place in therapeutics. He intends to subject this method to further investigation.

Diagnosis and Internal Treatment of Infantile Hypertrophic Pyloric Stenosis (*Erkennung und interne Behandlung der hypertrophischen Pylorusstenose der Säuglinge*). IBRAHIM. *Therapeutische Monatsschrift,* 1909.

Contrasting with the operative treatment of the condition and its associated high mortality, the experience of Ibrahim with internal treatment is of great interest. The writer finds that 83 per cent. of his cases were cured, and Heubner reports 90.5 per cent. cures. The disease occurs in the first four weeks of life. Visible gastric peristalsis, frequent projectile vomiting, are characteristic symptoms; a palpable tumor at the situation of the pylorus is pathognomonic. Daily gastric lavage and cataplasms on the abdomen relieve stagnation of food and pylorospasm. Most important is the consideration of the mother's milk. Defects must be corrected and, if necessary, breast milk must be replaced by food mixtures poor in fats, malzsuppe, etc. If, after minute attention to diet, vomiting continues, rectal feeding may be practised for a short time. Then a strict régime should be instituted, in which mother's milk is added very slowly to the diet.

The Prevention of Adhesions After Abdominal Operations, with Particular Reference to Olive Oil. W. O. HENRY. *The Medical Era,* May, 1909.

Having observed the beneficial effects of sterile olive oil in the prevention of adhesions on wounded surfaces, in that it keeps the parts moist and separated, the author was led to use it in the lower abdominal cavity and pelvis, after laparotomies, to prevent post-operative adhesions. To prevent adhesions he advises:

First. As far as possible cover up, with healthy, smooth peritoneum, all raw surfaces.

Second. Avoid injuring the peritoneum unnecessarily either by using sponges that are too hot or too rough, or by bruising it with instruments, such as clamps, forceps or needles.

Third. By care in leaving the least possible amount of raw or rough surfaces where ligatures are used, or sutures are introduced.

Fourth. By very careful adjustment of the peritoneal layer in closing the abdominal wound or covering the stumps.

Fifth. By a free use of sterile olive oil rubbed well into the raw surfaces, and into rough or otherwise injured peritoneum.

Chronic Glanders in Man, and Its Treatment and Cure by Dead B. Mallei (*Ueber chronischen Rotz beim Menschen und seine spezifische Behandlung und Heilung durch abgetötete Rotzbacillen*). KARL ZIELER, Würzburg. *Medizinische Klinik,* May 2, 1909.

The specific treatment of the case the writer reports gave such a remarkably striking result that, although the report embodies a single case, the work is worthy of attention. The patient had contracted glanders of the upper lip and nose six years before. Despite all treatment, the ulcerations were steadily progressive, so that, when the case came under Zieler's observation, the entire nose was gone. The nasal mucous membrane was extensively involved, therefore presenting a type of glanders in which the prognosis is bad. After glanders was proven by the mallein test and by animal inoculation, *x-ray* treatment was tried without improvement. The writer then prepared a vaccine after the method of Wright, of the killed-off B. Mallei. In a period of about two months the patient was given seven injections. At the end of this period, the ulceration had entirely healed. The author realizes that chronic glanders may result even after a latent period of many years, and therefore does not consider this case cured; but he feels justified in reporting the case by the striking result of the vaccine therapy after six years of futile treatment by other means.

The Mercurial Treatment for Tuberculosis, with a Report of Fourteen Cases and a Suggestion for a New Method of Administering Mercury. THOMAS J. BEASLEY. *Indianapolis Medical Journal,* May, 1909.

The author has come to the conclusion that the idea that mercury is a specific for tuberculosis is erroneous, although in a number of cases there is no doubt that the proper administration of the drug has decidedly improved the patient's condition. The administration has been made with an insoluble mercurial compound, the salicylate in an oily base such as liquid paraffin. A 10 per cent. solution gives the best results. The insoluble mercurial is steadily and slowly changed into a soluble salt by the tissue fluids and as absorption is slow, it is only necessary to give treatment every week to ten days. Fourteen cases were treated with mercury, only four showing any improvement.

Diffuse Painful Lipoma of the Foot. A. H. TUBBY, London, England. *The American Journal of Orthopedic Surgery,* May, 1909.

Under this title, the author describes a condition that he believes has never been recognized; he has seen five cases. The disease is an acquired one, with sharp macro- and miscroscopic differences from the congenital diffuse lipoma. In all of Tubby's cases, the tumor was situated between the inner edge of the sole of the foot and the internal malleolus, and did not extend further forward than the anterior part of the sustentaculum tali. The characteristics of the tumor are: Slow growth, indolence, extreme tenderness, and vascularity when incised. None of the cases recurred after removal. Microscopically, the tumor is composed entirely of fat, that is ramified by large and thick-walled bloodvessels. Nerves or nerve-endings could not be demonstrated, and there is, therefore, nothing to show why the tumor is so painful. The importance of the condition rests on its diagnosis—especially its differentiation from flat-foot and other static deformities.

Schlatter's Disease. J. E. BOWSER, Penrith, Scotland. *Edinburgh Medical Journal,* March, 1909.

Schlatter's disease is an avulsion of the tongue-shaped projection of the tubercle of the tibia. Adolescents are peculiarly predisposed to this lesion for the reason that this process is most marked at this period of life and also because athletic exercises are more often indulged in. The malady occasionally lasts for weeks or months and frequently arouses but little attention. The symptoms consist in pain and tenderness at the site of the tubercle and a limping gait. The author reports a case cured by the application of Bier's hyperemia.